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THESIS

SCALABILITY STUDY OF WIRELESS TACTICAL COMMUNICATIONS IN SUPPORT OF A MARINE CORPS EXPEDITIONARY BRIGADE

by

Michael A. Parker and Lance T. Arp

June 2000

Thesis Co-Advisors: John Osmundson
William Kemple

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SCALABILITY STUDY OF WIRELESS TACTICAL COMMUNICATIONS IN SUPPORT OF A MARINE CORPS EXPEDITIONARY BRIGADE

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ABSTRACT

This thesis reports the findings of a simulation modeling the communications architecture used during Major System Demonstrations 1 (MSD-1) of the Extended Littoral Battlespace (ELB) Advanced Concept Technology Demonstration (ACTD) and a suitable architecture for a large-scale battlespace. The simulation was accomplished with the use of a leading edge simulation tool, EXTEND™, and the specifications inherent to wireless communications. Specifically, EXTEND was used to replicate the protocols that are inherent within the WaveLAN and VRC-99A systems. A feasible sized architecture was modeled utilizing scaling techniques, which simulated the operation of a Marine Expeditionary Brigade (MEB), covering a 200X200 mile wireless tactical battlespace. This thesis further investigates the validity of a completely wireless tactical network versus the additional use of ground relays. This thesis demonstrates that the wireless tactical battlespace is scalable to satisfy the requirements of a Marine Expeditionary Brigade. Lastly, this thesis demonstrates the effects of an all WaveLAN architecture.

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EXECUTIVE SUMMARY

The future battlespace of the warfighter, as envisioned within the Joint Vision 2010 doctrine, is highly mobile, with communication needs not currently met. The Extending the Littoral Battlespace (ELB) Advanced Concept Technology Demonstration (ACTD) is a joint demonstration that supports key elements of Joint Vision 2010. Additionally, the Defense Science Board's 1996 Summer Study, "Tactics and Technology for 21st Century Military Superiority", concluded that emerging technology is the key to integrated communications, command, control, sensors, fires, and targeting capability. The ELB concept will enable expeditionary force operations in an extended littoral battlespace by providing joint maritime units with the means for rapid employment of forces, maneuver, and fire support from the sea

In the spring of 1999, the Navy and Marine Corps conducted the ELB ACTD Major System Demonstration-1 (MSD-1), which utilized a wide-area wireless battle network (WARNET) that was implemented using WaveLAN and VRC-99A technologies. The objective was to provide for mobile over-the-horizon C4I, with large bandwidth characteristics, down to the smallest unit without relying on tactical-satellite communications. The purpose of the MSD-1 was to prove in principle that a wireless tactical communications network was deployable without the use of permanent ground relay stations or satellites.

Wireless Local Area Networks (WLANs) are very resilient in that they can be built from small workgroup-like networks, to full scale Internets tied into a wired infrastructure network. Network nodes found in ELB ACTD MSD-1 were small groups of End User Terminals communicating through Access Points. Since the ELB units vary in size, WLANs are perfect for matching a topology to the application. [Ref 6]

Lucent Technology's WaveLAN networking products were used as the primary communications devices for the ELB demonstrations and will continue to be used for MSD-2. Specifically, the End User Terminals (EUT), small portable personal computers attached to an individual's waist, were given to individual Marines dispersed throughout the theatre of operations, while Access Points (AP) were strategically placed in aircraft, on High Mobility Multipurpose Wheeled Vehicles (HMMWV), and with truck vehicles, thus providing opportunity for mobility. Additionally, the Marconi Aerospace AN/VRC-99A radio was the principal radio for supporting the long-range links. High Mobility Multipurpose Wheeled Vehicles (HMMWV) Command and Control Variant (CCV), Amphibious Assault Vehicles (AAV) CCV, and the airborne relays were configured with the AN/VRC-99A.

The primary research objective of this thesis was to determine the infrastructure needed to support a wireless communications capability for a Marine Corps Expeditionary Brigade. The authors constructed a model in simulation software known as EXTEND. Each element of the WaveLAN had to be constructed utilizing a wireless protocol adhering to the IEEE 802.11 wireless standard. After completion of a smaller model for validation purposes, the final model was constructed and tested. The final

results of the simulation show that the scaling of the wireless communications architecture to a size comparable to that of a Marine Expeditionary Brigade resulted in no significant increase in delay. However, it does show that there is a decrease in performance when VTC is employed.

A subsidiary research objective was to determine the possibility of constructing wireless communications architecture using solely WaveLAN and WaveLAN-like technologies. Two more models were constructed. The first model included all of the components of the previous models, e.g., Access Points, End User Terminals and VRC-99A radios. The second model consisted of only WaveLAN components (no VRC-99A radios). Each was tested with identical message loading and the delays were measured. The data does in fact suggest that an all-WaveLAN architecture is possible. However, it should also be noted that it would take a considerable amount of extra radio assets to fill the role of a retransmission site, as well as extra personnel and logistics to support such an operation.

It is only logical that the military is seeking to exploit commercial technology to facilitate communications in the littoral battlespace. Wireless communications offer a means to communicate using the latest technology available. It is scalable and upgradeable. It allows the military to maintain a robust means of communication within a littoral environment. While there are still issues that must be resolved before utilizing this technology, e.g., security, wireless remains a viable option to facilitate Ship-to-Objective Maneuver.

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I. INTRODUCTION

A. PURPOSE

The purpose of this thesis is to model the communications architecture employed in the Extended Littoral Battlespace (ELB) Advanced Concept Technology Demonstration (ACTD) Major Systems Demonstration 1 (MSD-1) and scale the architecture in order to effectively support a larger operational-sized force. This thesis utilized Imagine That, Inc.'s Extend™ simulation software and studied the wireless technologies associated with this demonstration. Secondly, this thesis investigated the quality of service associated with a Wireless Wide Area Battlenet (WARNET) comprised entirely of WaveLAN or WaveLAN-like technologies.

B. BACKGROUND

The future battlespace of the warfighter, as envisioned within the Joint Vision 2010 doctrine, is highly mobile, with communication needs not currently met. The warfighter in a joint maritime environment will adhere to four primary doctrines, Joint Vision 2010, Operational Maneuver From The Sea (OMFTS), Forward...From The Sea, and Network Centric Warfare. Joint Vision 2010 is founded upon four primary pillars, dominant maneuver, focused logistics, full dimension protection, and precision engagement. Within Operational Maneuver From The Sea, there exists the need for continued communication links amongst those forces operating in this joint environment.

The Extending the Littoral Battlespace (ELB) Advanced Concept Technology Demonstration (ACTD) is a joint demonstration that supports key elements of Joint Vision 2010. Additionally, the Defense Science Board's 1996 Summer Study; "Tactics and Technology for 21st Century Military Superiority", concluded that emerging technology is the key to integrated communications, command, control, sensors, fires, and targeting capability. The ELB concept will enable expeditionary force operations in an extended littoral battlespace by providing joint maritime units with the means for rapid employment of forces, maneuver, and fire support from the sea. The ELB ACTD, sponsored by the Commander in Chief, U.S. Pacific Command (USCINCPAC), seeks to demonstrate and assess the military utility of communication technology and procedures that enable seamless operations by joint expeditionary forces in the world's littoral areas. [Ref 1]

In the spring of 1999, the Navy and Marine Corps conducted the ELB ACTD MSD-1, which utilized a wide-area wireless battle network (WARNET) that was implemented using WaveLAN and VRC-99A technologies. The objective was to provide for mobile over-the-horizon C4I, with large bandwidth characteristics, down to the smallest unit without relying on tactical-satellite communications. The purpose of the MSD-1 was to prove in principle that a wireless tactical communications network was deployable without the use of permanent ground relay stations or satellites.

C. RESEARCH OBJECTIVES

The primary research objective is to determine the infrastructure needed to support a wireless communications capability for a Marine Corps Expeditionary Brigade. A

subsidiary research objective is to determine the possibility of constructing a wireless communications architecture using solely WaveLAN and WaveLAN-like technologies (no VRC-99A or similar radio).

D. THESIS OUTLINE

The background information pertaining to the Extended Littoral Battlespace (ELB) and the relevant factors involved in a WARNET are included in Chapter II. Also in Chapter II are the descriptions of the modeling hardware and software environment. Simulation of the Major System Demonstration 1 (MSD-1) along with the decomposition of the problems and issues regarding the modeling of this network are included in Chapter III. Included in Chapter IV is the scaled simulation model matching a Marine Expeditionary Brigade (MEB) sized force in a tactical battlespace both inclusively and exclusively utilizing wireless technology, specifically WaveLAN technology. Chapter V provides a detailed analysis of the simulation model, in particular its validity in respect to an Extended Littoral Battlespace meeting the warfighter's tactical needs of quality of service, access, etc. The final conclusions and recommendations are also included in Chapter V.

E. EXPECTED BENEFITS OF THIS THESIS

This thesis will become the foundation for wireless technology studies in a tactical environment. Additionally, the simulation model will be utilized for follow on theses in the area of Combat Identification Network infrastructure.

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II. ARCHITECTURE AND EQUIPMENT

A. LITERATURE REVIEW OF THE LITTORALS AND EXTENDING THE LITTORAL BATTLESPACE

The future warfare environment for the United States Navy and the United States Marine Corps is envisioned to be drastically different than today's environment due to the diverse threats arising in littoral regions and the requirement to operate within them. Based on doctrinal literature such as Joint Vision 2010, Naval Warfare will utilize littoral regions for both naval superiority and operational maneuver from the sea. Joint Vision 2010's innovative approach to an integrated Sea/Shore force is fueled by emerging technologies and the opportunities they create. The following is the operational doctrine, which enables the Extending of the Littoral Battlespace.

1. Joint Vision 2010

Determining a common vision for the strategic environment is the key to the Department of Defense's success in the 21st century, specifically during the first decade. Just as the business world uses a common vision to stretch the imagination of a corporation, Joint Vision 2010 attempts to stretch the imagination of all warfighters. There is currently no monolithic enemy to match strategic, operational and tactical doctrine against. In a world of international economy and geopolitical change, the Department of Defense must be prepared for drastic changes in it's strategic environment. By embracing change and innovations in technology, the DoD will remain on the cutting edge, and Joint Vision 2010 is the vehicle to support this evolution in warfare. Joint Vision 2010 provides

a template to channel the collective efforts of the Armed Forces. The armed forces are entering a strategic environment rich with joint operations and the need for joint tactical coordination. [Ref 2]

The Marine Corps view of the future strategic environment reveals both danger and opportunity. Danger – chaos in the littorals – is characterized by myriad clashes of national aspirations, religious intolerance, and ethnic hatred. Opportunity emanates from advances in information management, battlefield mobility, and the lethality of conventional weaponry. Such changes in the operational environment, representing both new threats and enhanced capabilities, raise many questions. [Ref 2] Joint Vision 2010 works in concert with Operational Maneuver From the Sea (published doctrine building on the foundation of the white papers "...From the Sea" and "Forward...From the Sea"). The pillars of Joint Vision 2010, dominant maneuver, precision engagement, full dimensional protection and focused logistics, along with information superiority and the end state of full spectrum dominance are defined in the Joint Force Quarterly (Winter 1998) as follows:

Dominant Maneuver – the multidimensional application of information, engagement, and mobility capabilities to position and employ widely dispersed joint air, land, sea, and space forces to accomplish the assigned operational tasks.

Precision Engagement – a system of systems that enables our forces to locate the objective or target, provide responsive C2, generate the desired effect, assess our level of success and retain the flexibility to reengage with precision when required.

Full Dimension Protection – to ensure our forces can maintain freedom of action during deployment, maneuver, and engagement while providing multi-layered defenses for our forces and facilities at all levels.

Focused Logistics – the fusion of information, logistics, and transportation technologies to provide rapid crisis response, track and shift assets even while en route, and deliver tailored logistics packages and sustainment directly at the strategic, operational, and tactical level of operations.

Information Superiority – the capability to collect, process, and disseminate an uninterrupted flow of information while exploiting or denying an adversary's ability to do the same.

Full Spectrum Dominance – this is the ultimate objective of Joint Vision 2010, to be preeminent in any form of conflict.

These concepts are the architecture of Joint Vision 2010 and are intertwined with Operational Maneuver From the Sea. The Extending the Littoral Battlespace ACTD seeks to support the requirements of Joint Vision 2010, specifically the pillars discussed above.

2. Operational Maneuver from the Sea (OMFTS)

> In the White Papers "...***From the Sea"*** and "***Forward...From the Sea"***, the Navy and Marine Corps presented a common vision for a future in which skillfully handled naval forces would enable the United States to exert its influence in the littoral regions of the world. Building upon the foundation laid by those papers, ***Operational Maneuver from the Sea*** (OMFTS) deals explicitly with the full spectrum of challenges that we will have to face, the dangers and opportunities created by new technologies, and the very prospect of adapting the tradition of maneuver warfare, not merely to amphibious operations, but to all aspects of warfare in, and around, coastal waters. [Ref 3]

The principles of OMFTS, which are the driving force for future engagements in littoral regions, are listed in the table below:

• Focus on an operational objective
• Use the sea as maneuver space
• Generate overwhelming tempo and momentum
• Pit strength against weakness
• Emphasize intelligence, deceptions, and flexibility
• Integrate all organic, joint, and combined assets

Table 1. Principles of Operational Maneuver from the Sea

There is no single answer to future challenges in the strategic environment, although Operational Maneuver is applicable over a range of requirements. [Ref 2] The following are the concepts found within Joint Vision 2010 and their relationship to Operational Maneuver as discussed in the Joint Force Quarterly (Winter 1998).

Dominant Maneuver – the application or decisive force to attack enemy centers of gravity at all levels and compel an adversary to either react from a position of disadvantage or quit.

Precision Engagement – provides for a wide array of engagement options for joint force commanders including non-lethal technology for use when less than deadly force is desirable.

Full Dimension Protection – preservation of freedom of action and, by layering air, surface, and subsurface defenses, which affords "full dimensional" defense.

Focused Logistics – the option to remain sea based or buildup support ashore gives Joint Task Force commanders the means to ensure the efficiency, security, and timeliness of Combat Service Support, "right time, right place".

Information Superiority – stresses the need to acquire, maintain, and exploit information and deal with uncertainty. There is a central difference between JV 2010 and Operation Maneuver From the Sea (OMFTS) when addressing information superiority. OMFTS characterizes the operational environment as a dynamic, fluid situation. An important piece of information superiority is the warfighter's cognitive abilities to produce

superiority not just simply software and hardware. JV 2010 places less emphasis on the human dimension of information superiority than does OMFTS.

3. The Extended Littoral Battlespace

The concept of Extending the Littoral Battlespace (ELB) incorporates the concepts of Operational Maneuver from the Sea, and Joint Vision 2010. The Office of Naval Research (ONR) established the Advanced Concepts Technology Demonstrations (ACTD) for ELB from a Broad Agency Announcement dated May 7, 1997. The Office of Naval Research and the Marine Corps Combat Development Command jointly manage the program. The Commander in Chief, United States Pacific Command (USCINCPAC) is the operational sponsor. The primary objective of Advanced Concept Technology Demonstrations is to accelerate and facilitate the application of mature technologies to solve important military problems. There is a need to extend the littoral battlespace. The ELB ACTD seeks to fulfill this need using a command and control architecture in a manner that can be assessed and adheres to OMFTS and Joint Vision 2010 concepts. Desired operational capabilities of a littoral battlespace command and control system include a reliable, high bandwidth, wireless, wide-area network that extends communications beyond line of sight (LOS) without depending on satellites or ground relay stations. [Ref 1]

The foundation of the Extended Littoral Battlespace (ACTD) is firmly grounded within the Ship-to-Object Maneuver (STOM) concept as well as the CINC's Guidence. The CINC's Guidence consists of a Working CINC's Intent, five Critical Operational Issues (COI), and a CINC long-range vision statement.

STOM entails an attack by combat forces through the littorals at the time and place that best supports the joint force's primary objectives. The principles of this concept apply equally to the execution of all amphibious forcible entry operations, whether conducted as operational maritime maneuver, as tactical level support of sustained operations ashore, or as part of the myriad of activities conducted during other expeditionary operations. [Ref 3] STOM is a new tactical idea that will seek to continue the momentum gained by maneuver at sea, without break or self imposed delay. [Ref 3] WARNET technologies, coupled with appropriate Command and Control applications, are primary enablers for full empowerment of STOM at the tactical level of operations. This is the primary focus of MSD-1. Empowerment of STOM operations will further enable OMFTS at the operational level. These, in turn, will provide for greatly enhanced Joint Task Force combat capabilities by facilitating the extension of the littoral battlespace and providing seamless maneuver over the horizon directly against objectives deep inland. [Ref 1] Figure 1 illustrates OMFTS and Maneuver Warfare and how they are the both instrumental in the STOM framework.

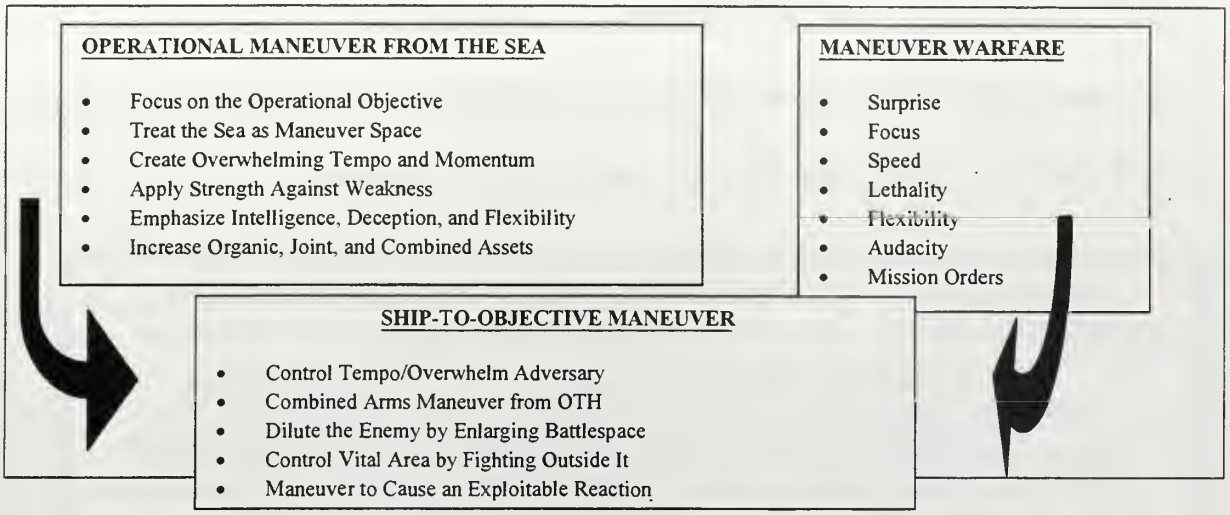

Figure 1. Ship-to-Objective Maneuver

STOM applies the principles and tactics of maneuver warfare and OMFTS, while emphasizing sea-based command and control, logistics, and fire support. Improved information connectivity allows the landing force command element to remain at sea, capable of effective command, but better protected from enemy attack. [Ref 3]

STOM is enabled with information superiority, largely due to continuous information connectivity and fundamental information superiority, which in turn can lead to full spectrum dominance. This information superiority is accomplished by quicker decision and execution cycles and is the raw material of decision making and execution. Pertinent information, disseminated throughout the battlespace, specifically to the commander's in theatre, develops more effective and efficient orientation and decision phases of the decision and execution cycle. Execution information is also formulated and acted upon more efficiently with extended, continuous communication in the battlespace.

The Working CINC's Intent provides the operational perspective for the overall assessment effort during the ACTD. [Ref 1] Table 2 below depicts the accomplishments of the Working CINC's Intent and the dynamic nature it involves:

Working CINC's Intent
• Enhance the "Joint Task Force (JTF) From The Sea" by fully integrating and fusing the Unified Command and JTF headquarters and joint force component command's capabilities to address the four fundamental concepts of Joint Vision 2010 (dominant maneuver, precision engagement, focused logistics, and full dimensional protection). • Provide for significant increases in the effectiveness of the JTF while decreasing its vulnerabilities. Leverage information superiority and technological innovation by focusing upon joint interoperability and integration of enhanced C4I, targeting, fires, sensors, and rapid employment of joint forces from the sea operating within an extended littoral battlespace. • Assessments of military utility will be driven by "component commander" input and operational assessments within realistic but controlled battlespace environments.

Table 2. Working CINC's Intent

The value of understanding how ELB technologies contribute to the Working CINC's Intent will be addressed in the final military utility assessment report at the end of the ACTD (FY01) and therefore was not a primary focus area during MSD-1.

Also part of the CINC's guidance are the five Critical Operational Issues (COIs) for the ELB ACTD determined by USCINCPAC, they are identified in Table 3 below. [Ref 4]

- Can ELB technologies greatly expand the JTF/naval forces' capabilities to conduct over-the-horizon collaborative planning and coordination that integrates all necessary elements into a seamless environment (network)?
- Can a deployed Commander, Joint Task Force (CJTF), through enhanced situational understanding and unprecedented battlespace dominance, exercise command and control over disaggregated joint and/or combined early entry forces to shape and control the littoral area in ways not possible today?
- Can an embarked, dispersed task force staff provide sufficient real-time information to dramatically increase early entry force effectiveness while reducing force vulnerability?
- Can an afloat joint task force provide sufficient massed fire support to early entry forces to fulfill the requirements of over-the-horizon calls for fire?
- Can early entry expeditionary forces, through the application of advanced technology and concepts, rapidly prepare the battlefield for movement of command and control ashore and the transition to follow-on forces?

Table 3. ELB Critical Operational Issues

Found within USCINCPAC's guidance for the MSD-1, are the MSD-1's Eight Core Assessment Areas & the Overarching Assessment Area. They are listed below. The eight areas are grouped into the transport and application functional areas that enable the information, sensor and fire grids, which in turn enable the JV2010 concept of Information Superiority.

The eight core areas are:

- Transport
    - Wireless Wide Area Networking (WARNET)
    - Voice-Over-Data
- Application
    - Situational Awareness
    - Collaborative Planning
    - Engagement Coordination
    - Distributed C2
    - On-the-Move C2
    - Small Unit Leader & Individual C2

a. Objectives

The objective of the ELB ACTD is to demonstrate the military utility of OMFTS, on an Extended Littoral Battlefield, which is enabled by, advanced technologies. [Ref 4] The eight core assessment objectives will be evaluated for the military utility. The vision of Network Centric Warfare in which operational advantage is achieved from a strong networking of a well informed but geographically dispersed force was embraced in the architecture. An Amphibious Readiness Group (ARG)/Marine Expeditionary Unit (MEU) size force, comprising of five to ten ships, thirty armored vehicles, thirty fixed/rotary wing aircraft, and two thousand Marines will be used for the modeling effort. The capabilities must be scalable up to a Marine Expeditionary Brigade (MEB). [Ref 1]

The ELB ACTD MSD-1 took place in April 1999 off the coast of San Diego, California. An objective of this ACTD was to demonstrate a wireless communications system that integrated the core capabilities of Command, Control,

Sensing, Fires and Targeting. A requirement was that the system must demonstrate its overall military utility and display a user-friendly operating environment. ELB ACTD MSD-2 will build upon the results and developments of ACTD MSD-1. [Ref 1]

b. Concept of Operations for Network Support

The ELB demonstration utilized the operational concepts found within the Operational Maneuver from the Sea and Ship-to-Objective Maneuver doctrines. The demonstrations sought to create a continuous command and control communications architecture from ship-to-shore, ship-to-objective and beyond. By continuous communications, the Joint Task Force commander will maintain information superiority. Information flows will be continuous and real time. The demonstration employed wireless technology, specifically wireless networking from ship-to-shore and ship-to-Marine, via airborne relays. The relay platforms chosen for the demonstration were two Navy P-3s and a commercial Crownair aircraft; however, for an operational system other platforms including helicopters and high altitude Unmanned Aerial Vehicles (UAVs) were also considered. Figure 2 depicts the communication network that was utilized. [Ref 1]

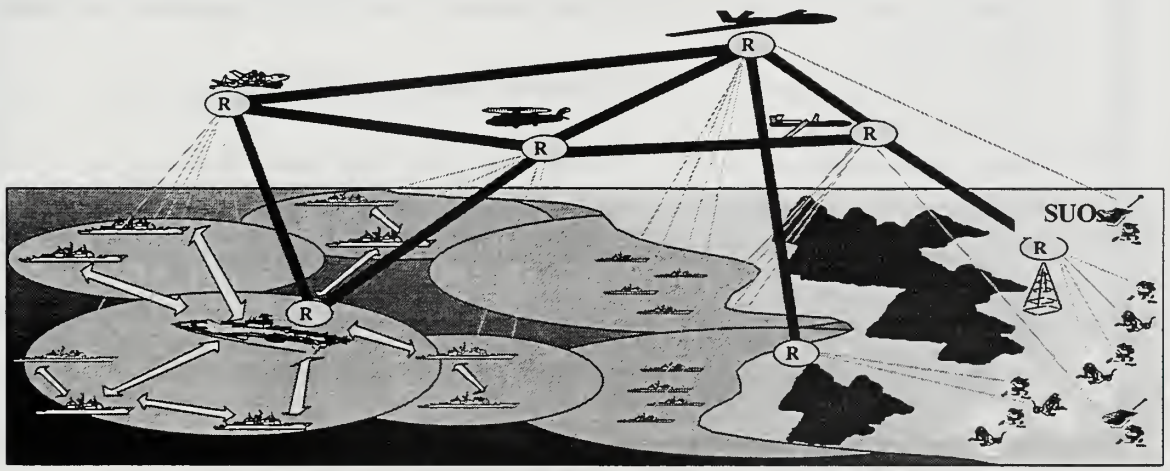

Figure 2. Communication Network for ELB (R-Routing)

c. Wireless Networking Objective

The communication objective for the ELB ACTD MSD-1 was to provide the wireless communication network required to support operational forces in theatre. Based on the principles of a highly dynamic, multiple node force, the wireless network model must take on the characteristics of a mobile force and introduce mobility within the communications network. This calls for the use of nodal network models built on a dynamic topology. There should be dynamic addressing of nodes within the network to ensure constant communications in order to gain and maintain both momentum and information superiority. End User Terminals (EUT) will not be fixed to a specific Access Point (AP), instead, the dynamic addressing scheme will allow the EUT's to roam throughout the battlespace and be passed on from Access Point to Access Point as required in order to maintain connectivity. Thus a EUT will maintain addressing throughout the battlespace. The desired qualities of the MSD-1 wireless network are identified in Table 4. [Ref 1]

- Ability to support point-to-point, multicast, and broadcast packet-switched communications among large and small capacity users over distances up to three hundred miles.
- Ability to support point-to-point and group voice service across the entire extended battle space.
- Ability to include service to Marines and dismounted soldiers with battery-powered radios and computers at rates of at least 64 kilobits per second (Kbps).
- Ability to include service to large users at rates up to 1.5 Megabits per second (Mbps).
- Ability to automatically configure and reconfigure the network topology and routing/switching databases as both users and airborne platforms move.

Table 4. Desired Qualities of the MSD-1 Wireless Network

The network must also be capable of supporting numerous computer applications such as e-mail, file and image transfer, web browsing, interactive white-board, and collaborative voice. Video teleconferencing is also desired among major platforms. [Ref 1] The basic service will be provided by connectionless datagrams. Where needed, reliable link and end-to-end services will be achieved by protocol overlays. Desired data rates were estimated to be 1.5 Mbps between major platforms and 64 Kbps to the dismounted warrior. [Ref 1]

B. EXTENDED LITTORAL BATTLESPACE ACTD SYSTEMS

1. BENEFITS OF WIRELESS TECHNOLOGY

a. Mobility

The ELB demonstration utilized a highly mobile fighting force that must be able to communicate with its units while static or on the move. A Wireless LAN can provide access to real-time information for those units or individuals that cannot be hard-wired to a network. [Ref 6]

b. Installation Speed and Simplicity

ELB demonstration units cannot afford to spend the time, nor is it operationally feasible, to lay networking cable while in the field. Installing a WLAN can be quick and easy and allow these units the flexibility of taking the network wherever they go. [Ref 6]

c. Scalability

WLANs are very resilient in that they can be built from small workgroup-like networks, Access Points, to full scale Internets tied into a wired infrastructure network. Network nodes found in ELB ACTD MSD-1 were small groups of End User Terminals communicating through Access Points. Since the ELB units vary in size, WLANs are perfect for matching a topology to the application. [Ref 6]

2. WAVELAN SYSTEMS

Lucent Technology's WaveLAN networking products were used as the primary communications devices for the ELB demonstrations and will continue to be used for MSD-2. Specifically, the End User Terminals (EUT), small portable personal computers attached to an individual's waist, were given to individual Marines dispersed throughout the theatre of operations, while Access Points (AP) were strategically placed in aircraft, on High Mobility Multipurpose Wheeled Vehicles (HMMWV), and on truck vehicles, thus providing opportunity for mobility. Additionally, the Marconi Aerospace AN/VRC-99A radio was the principal radio for supporting the long-range links. High Mobility Multipurpose Wheeled Vehicles (HMMWV) Command and Control Variant (CCV), Amphibious Assault Vehicles (AAV) CCV, and the airborne relays were configured with the AN/VRC-99A. The primary components of the Wireless Wide Area Battlenet (WARNET) are identified in Table 5. [Ref 7] Each of these systems is discussed in detail in the following sections

• WaveLAN II wireless cards in any computer, such as the End User Terminal (EUT) or a desktop version. • WavePOINT wireless Access Points connected to ground, air, and sea network routers. • AN/VRC-99A network radios to provide ground, air, and sea Access Points for VRC radio nets and connection to network routers.

Table 5. Components of the WARNET

a. WaveLAN/Wireless LAN Protocol IEEE 802.11

WaveLAN is a wireless system that offers end users connectivity to network services supporting voice, data, and message traffic. WaveLAN creates an opportunity to explore wireless communications in a tactical environment that has the potential for a more secure (LPI/LPD) link than that found in the current communications architecture due to Direct Sequence Spread Spectrum (DSSS). The latest WaveLAN product, known as WaveLAN/IEEE 802.11 provides a wireless network interface to any computer via an ISA card or a PCMCIA card. WaveLAN meets the Institute of Electrical and Electronic Engineers (IEEE) 802.11 standard. This standard, although relatively new, is the driving force behind interoperability in a wireless network scheme. WaveLAN/IEEE cards have a pair of antennas embedded directly into the card and have a miniature connector to allow substitution of external main (transmit/receive) and auxiliary (receive only) antennas. The extended ranges associated with the ELB ACTD required WaveLAN to be modified to apply a higher power gain to the antenna. Figure 3 is a WaveLAN card. [Ref 7]

Figure 3. WaveLAN Card

WaveLAN utilizes DSSS technology, which broadens the signaling band by artificially increasing the modulation rate using a spreading code, to meet the regulations for unlicensed use in the Industrial, Scientific, and Medical (ISM) frequency band at 2.4 GHz. WaveLAN products use differential quadrature phase shift keying (DQPSK) modulation, which is also included in the IEEE 802.11 standard. The channel access protocol for WaveLAN/IEEE is Carrier Sense, Multiple Access with Collision Avoidance (CSMA/CA) as specified by IEEE 802.11. [Ref 7] Within a single channel, all WaveLAN participants share the channel by the CSMA time-sharing process. WaveLAN has no hard limit on the number of nodes that can share a single channel. If more than one transmitter is active at any one time, a collision will occur and a retransmission will be required. Multiple computers can exchange data in a wireless local area network by employing a WaveLAN interface card at each computer. Using the IEEE 802.11 CSMA/CA protocol, the exchange is very analogous to an Ethernet in a wireless environment. [Ref 7] A transmission by any one unit is expected to be received by all other units. This supports both collision avoidance and broadcast.

The introduction of mobility, however, generates a problem. When a node moves out of communication from the other nodes, both the broadcast and collision avoidance properties fail to be satisfied across the entire LAN, creating a "hidden node". [Ref 1] A "hidden node" is created when two terminals are communicating with the same terminal causing a collision because they are unable to detect one another. A solution to this mobility problem is to use a WaveLAN access point operating under the Request-to-Send/Clear-to-Send (RTS/CTS) protocol. RTS/CTS guarantees a quality of service through eliminating lost messages as a result of "hidden node" collisions. [Ref 7] The CSMA/CA protocol is still used to control the RTS and CTS messages. The RTS/CTS protocol was used for the ELB ACTD.

The current WaveLAN card supports three data rates: 1 Mbps, 2 Mbps and 11 Mbps. [Ref 7] Each WaveLAN link senses existing error statistics and adjusts its data rate to one of the available rates. All signaling is done at the 1 Mbps rate so that headers can be read without dependence on data rate. [Ref 7]

b. WaveLAN Access Points

WavePoint II Access Point is a wireless LAN product utilized in the WaveLAN network. WavePoint is a small, compact, wireless-to-wireless and wireless-to-ethernet bridge. A WavePoint is normally used to provide connectivity between a wired or fiber network and one or more WaveLAN wireless interface units. [Ref 7] It provides two wireless WaveLAN interfaces and an Ethernet interface. WavePoint provides easy network access to mobile users and difficult to wire locations, such as the tactical

environment. When a WavePoint is used with two wireless interfaces, the interfaces are usually operated in maximally separated RF bands, and the antennas are separated to achieve as much isolation as possible. Ordinarily the Ethernet interface is used to interconnect multiple access points. However, one of the wireless interfaces can be used on each access point to provide wireless network connectivity among multiple access points and enable a wireless backbone, allowing extension of the wireless network. [Ref 7] WavePoint provides network access and extended Over-the-Horizon (OTH) coverage by daisy chaining access points. The ELB ACTD used this mode. Figure 4 is a WavePoint. [Ref 1]

Figure 4. WavePoint

c. AN/VRC-99A

The VRC-99A is an L-Band programmable communications transceiver that provides wireless LAN service for line-of-site (LOS) data and/or voice links. [Ref 8]. It is a Marconi Aerospace product and operates in the 1300-1500 MHz frequency range. The AN/VRC-99A is a programmable communications system that can provide virtual connectivity and data gram service guaranteeing reliable, simultaneous, multichannel voice, data, image and video transmission. [Ref 8] It can be mounted in ground,

vehicular, shipboard and airborne configurations. [Ref 8] The VRC-99A provides asynchronous and synchronous type interfaces including an 802.3 Ethernet with up to 10 Mbps throughput for use within the WARNET. It uses a specialized direct sequence, spread spectrum technique that provides low probability of intercept/anti-jamming (LPI/AJ) capabilities and has an embedded Type 1 encryption feature. [Ref 8] This radio can support a number of channel access techniques to include Code Division Multiple Access (CDMA), Frequency Division Multiple Access (FDMA) and Time Division Multiple Access (TDMA). [Ref 8]

With TDMA, each radio transmits a short burst of a digitally modulated carrier during a precise time slot (epoch). Each station's burst is synchronized so that it arrives at its destination at a different time, thus, avoiding a collision with another station's carrier. TDMA was the only technique used for the ELB MSD-1.

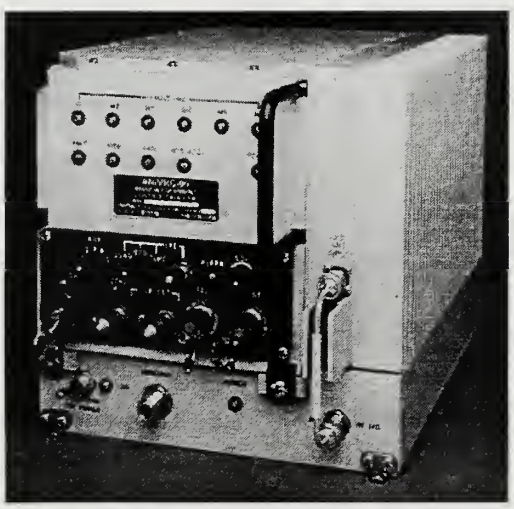

Figure 5. AN/VRC-99A

The VRC-99A was used as the backbone for long distance communications within the ELB ACTD MSD-1. Adaptive routing inherent within the system provides for network survivability and dynamic mobile applications. [Ref 8] A summary list of the key planning strengths and limitations as identified by the ELB ACTD MSD-1 *Assessment Final Report* were:

- 16 radio limit per net.
- 23 slots limit per net – there is a trade-off between the number of radios that can be employed as part of the net the bandwidth available because there are only 23 time slots that can be used.
- Multiple nets per location.
- Adaptive routing.
- 5-10 minutes reconfiguration period. (Some reconfiguration could be done remotely using TelNet, and some required on scene operators.)
- Radio time of day must be set manually within 90 seconds for all radios on the network.
- One radio dropping out of the network does not affect the rest of the network unless it was relaying network traffic to radios that are otherwise out of the network.
- The total number of radios must be programmed into each radio manually. All radios need not be on.
- At least one time slot must be allocated per radio for it to enter the network. Additional time slots can be dynamically reallocated remotely.

- Routers use static routing tables.

It should be noted that this information is given to the reader simply to illustrate the robustness of the VRC-99A as well as give a basic knowledge of operation. This thesis will focus primarily on the WaveLAN 802.11 protocol used in conjunction with the VRC-99A. [Ref 1]

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CHAPTER III WAS COMPLETED IN CONCERT WITH CAPTAIN KEVIN STEWART'S THESIS REGARDING COMBAT IDENTIFICATION

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III. NETWORK MODELING AND SIMULATION

A. MODELING AND SIMULATION

This chapter explores the use of modeling and simulation as a tool in understanding and evaluating the network architecture utilized in the ELB demonstration. It must be noted that it was the authors original intent to model what took place within MSD-1 and then validate the model with the actual data produced during the exercise. However, this would not be the case. Although the architecture could be readily reproduced, the data for comparison was not accessible. Much effort went into obtaining such data but to no avail. After several months, the Technical Director of the ELB ACTD acknowledged that the data would probably be insufficient for our cause. This left the authors with validating the model using a common approach of measuring delay equal to the bandwidth divided by the message size. Two models have been developed and tested using a PC based, object oriented modeling and simulation tool called Extend ™ developed by Imagine That, Incorporated. Extend is an easy to use graphical simulation tool that allows a user to model complex discrete or continuous systems while varying performance parameters. [Ref 9].

The application centers on standardized libraries of process objects, referred to as blocks. It is designed to be a user friendly way to facilitate the rapid development of simulation models of queuing systems by dragging and dropping blocks from the library to the model workspace. Models can be built to simulate continuous flow problems or discrete events. The different libraries that are built into the application are generally

designed specifically for one or the other, however, many objects within the libraries are interchangeable with either type of model. [Ref 9]

The two main types of blocks are item blocks and attribute blocks. Item blocks receive and process discrete events or items that pass through them. Attribute blocks receive and process attribute values associated with items, although the items do not specifically transit through these blocks. The flow of the model is determined by the order of the connections between blocks of the model. [Ref 9] The figures within this chapter show the blocks and connectors the authors used for the modeling and simulation. Blocks can be grouped together as a hierarchical block and represented as a custom block in the model workspace. Complex models can be condensed at the highest level into a readily understandable design. All of the structure with the modeling of the wireless network is hierarchical, blocks are contained within higher level blocks. [Ref 9] Appendix A contains each major block utilized for the modeling and simulation along with the heirarchicalized logic built within these blocks. The model was built as an object oriented model focusing on the messages within a wireless network.

The first step in developing the model was to concentrate on the individual components that made up the communications network used during the ELB/ACTD. The authors took a course on the Extend software while at The Naval Postgraduate School, therefore, a basic understanding of the software was achieved. While Extend provides the blocks necessary to construct such a model, all of the communications component logic had to be built from scratch. Much effort went into the construction of each component listed within this chapter and appendix A. To give some perspective to the size of the final

model, 160 MB, the authors of Extend were given a demonstration and acknowledged that it was one of the largest models that they had seen using their software. It should also be noted that they were essential in reducing the size of the original model, 256 MB, to its current size, which is much more manageable. The first piece of the communications architecture developed consisted of one Access Point (AP) and three End User Terminals (EUTs). Once this was completed, it was validated using simulated message traffic and observing the latency associated with each transmission. The same logic utilized for the three EUT AP could then be applied to the development of a multitude of Access Points, each with a differing number of EUTs. For simplicity, the description provided will only address a three EUT Access Point. The AN/VRC-99A was modeled utilizing Time Division Multiple Access (TDMA) and served primarily as the long-haul communications medium for messages traveling to access points that were beyond the ranges associated with WaveLAN. For example, the VRC-99A links were used as the long-range interconnection among ships and aircraft and from aircraft to HMMWVs. WaveLAN, on the other hand, was used to connect from the aircraft to the EUTs and also to support terrestrial LANs centered on a HMMWV WavePoint (Access point mounted on a HMMWV). Once these components are created, they can be interconnected to construct communications architectures of virtually any size.

The model descriptions are intended to provide a basic working knowledge of the model. The low-level design details will be omitted, as they tend to be complex and do not provide any additional benefit to the overall understanding of the models. The goal of this chapter is to provide a general explanation of the models, rather than concentrate on block-

by-block descriptions. Each model will begin with a high level view and then proceed with more detailed explanations as necessary for individual components. Appendix A is the data dictionary associated with the models and contains the low level designs.

1. Description of a Three EUT Access Point

Figure 6 represents a three EUT AP. As depicted, the end user terminals are connected to an Access Point where there is a sensor and detector to implement the channel access protocol of Carrier Sense, Multiple Access with Collision Avoidance (CSMA/CA) as specified by IEEE 802.11. All message traffic is initiated at an EUT. To increase the reliability of the network and prevent a possible message collision due to the "hidden node" problem addressed previously, the additional protocol of Request to Send/Clear to Send is utilized. An EUT will generate an initial RTS and then all subsequent message traffic will be triggered as each different type of message is received.

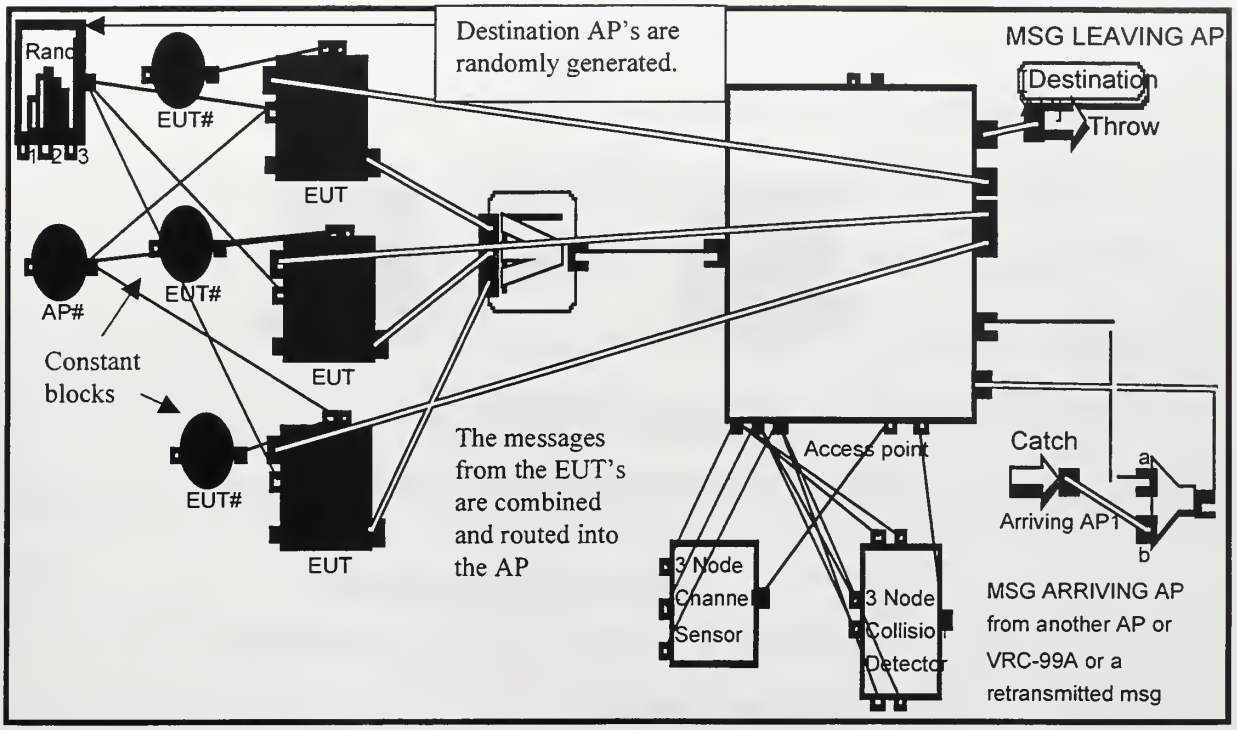

Figure 6. Three EUT Access Point

A Request to Send (RTS) initiates a Clear to Send (CTS), a CTS initiates the actual Message (MSG), and a MSG initiates an Acknowledgement (ACK) to complete the process. The CSMA/CA protocol is still invoked to control all the different types of message transmissions. Refer to Figure 7.

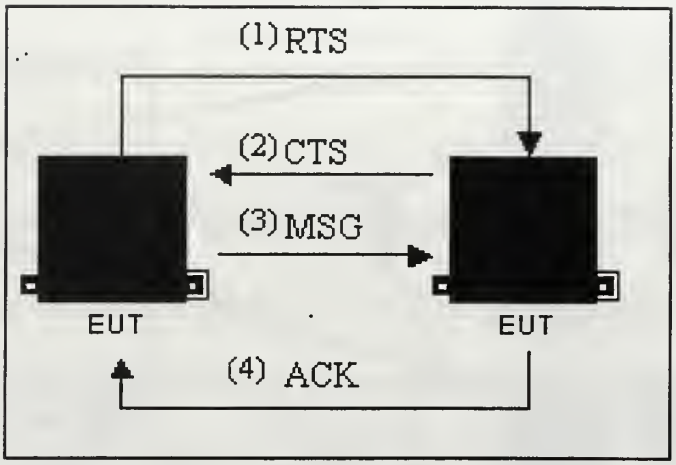

Figure 7. IEEE 802.11 Protocol

a. End User Terminal

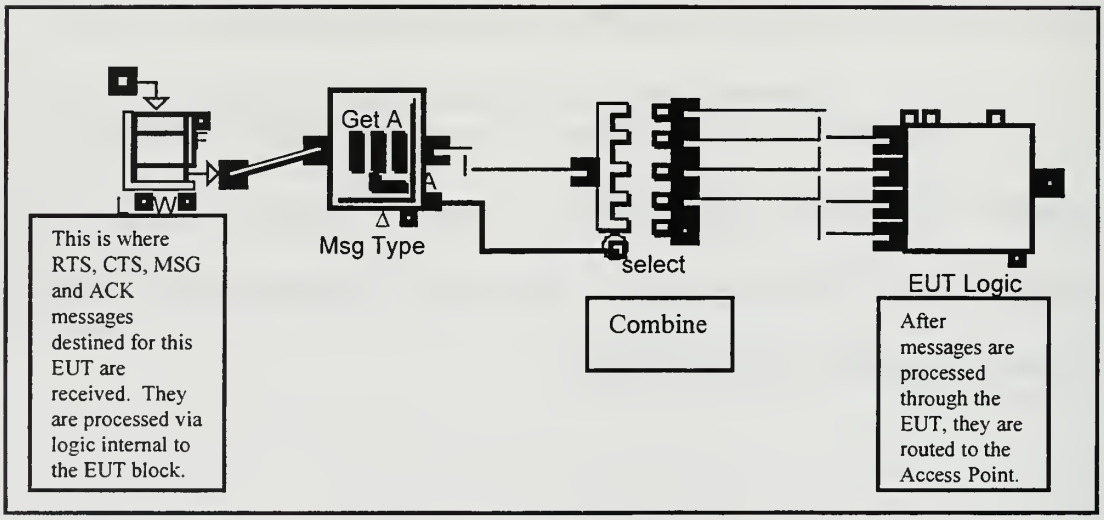
Get A
Msg Type
select
Combine
EUT Logic
This is where RTS, CTS, MSG and ACK messages destined for this EUT are received. They are processed via logic internal to the EUT block.
After messages are processed through the EUT, they are routed to the Access Point.

Figure 8. Initial Break Down of End User Terminal

Figure 8 is the initial break down of the end user terminal. The combine block captures the different types of messages to ensure the next appropriate type of message is initiated. For example, if a RTS message is sent to this EUT, a CTS message would be

sent back to the origin EUT to continue the protocol. Within the EUT logic block, the various types of messages are generated and assigned destination addresses. Therefore, once a EUT receives a RTS, it must have the ability to identify the originator and determine the correct destination address. This is accomplished by assigning attributes to messages as they are generated. It includes, but not limited to, an Origin EUT, Origin AP and Message Size as well as their destination counterparts. The EUT logic is provided in Appendix A. After messages are processed through the EUT, they are routed to the Access Point.

The architectural message loading was derived from a combination of both the Department of Defense Interface Standard and a RAND Study. [Ref 10] The DoD's Variable Message Format (VMF) Technical Interface Design Plan was used to determine the message length for each type of message. The RAND study supplied the percentages of each type of message most likely to be implemented within a military communications network. The following chart depicts the type of message loaded as well as the corresponding percentage of use.

Message Type	Message Size	Percentage of Use
Establish/Confirm Contact	500	47%
Situation Report	1600	24%
SPOT Report	2000	8%
Request Information	2000	13%
Issue Orders	12000	7%

Table 6. Message Loading

While these five messages are not all inclusive of the communications found on a battlefield, they are indicative for the most part and provide a basis from which to start. The message loading also includes VTC as well as voice. Only certain nodes will have access to VTC, but each EUT will have voice capability. An assumption is made that voice will only be used for coordination and will not replace the conventional voice communications. The message loading logic is available in Appendix A.

b. Access Point

All message traffic generated from an EUT flows through the Access Point. This includes messages from a local EUT within the same Access Point and messages from external Access Points. Additionally, all messages that collide are retransmitted through the access point. Once a message is inside the access point, the destination address of the message is determined to be either internal or external to the Access Point. Figure 9 depicts this basic process, the entire figure is the Access Point.

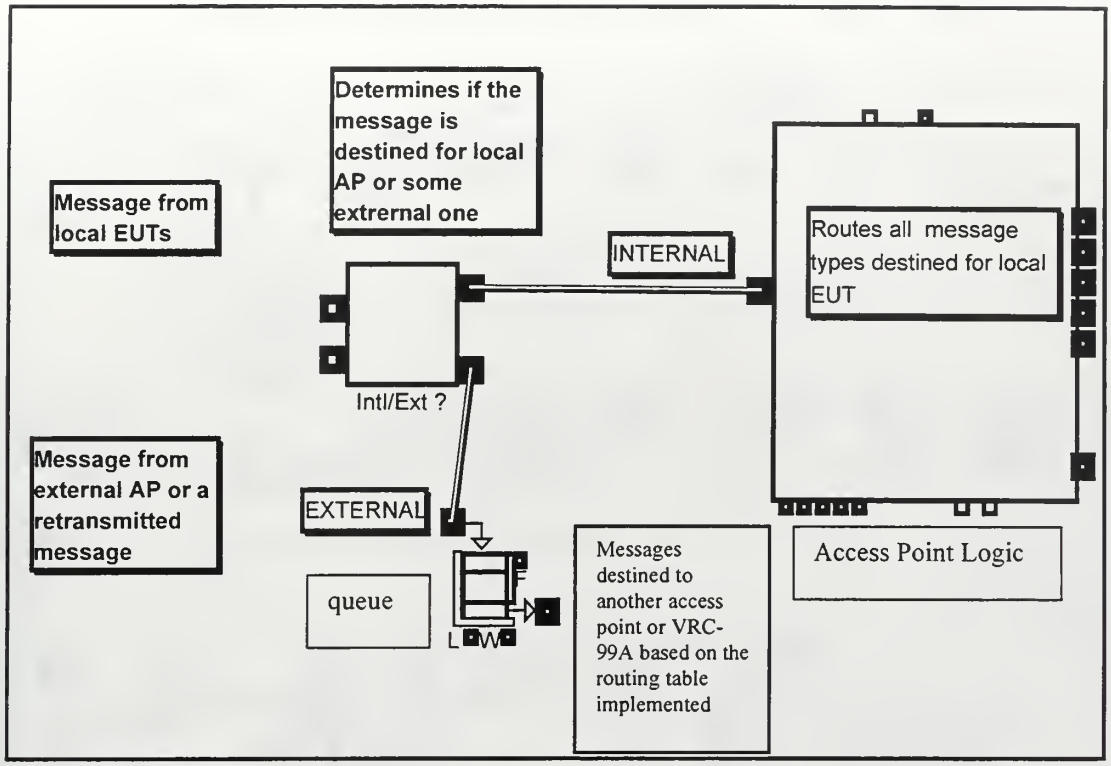
Determines if the message is destined for local AP or some extrernal one
Message from local EUTs
INTERNAL
Routes all message types destined for local EUT
Intl/Ext ?
Message from external AP or a retransmitted message
EXTERNAL
queue
Messages destined to another access point or VRC-99A based on the routing table implemented
Access Point Logic

Figure 9. Internal/External Component of Access Point

External messages are routed to another access point or a VRC-99A based on the routing table and network configuration. The logic of the internal/external decision is provided in Appendix A. Figure 10 depicts the traffic flow of internal messages. Messages are received and then routed to the appropriate EUT. The message then enters a bandwidth delay, which is calculated using the formula of message size divided by bandwidth.

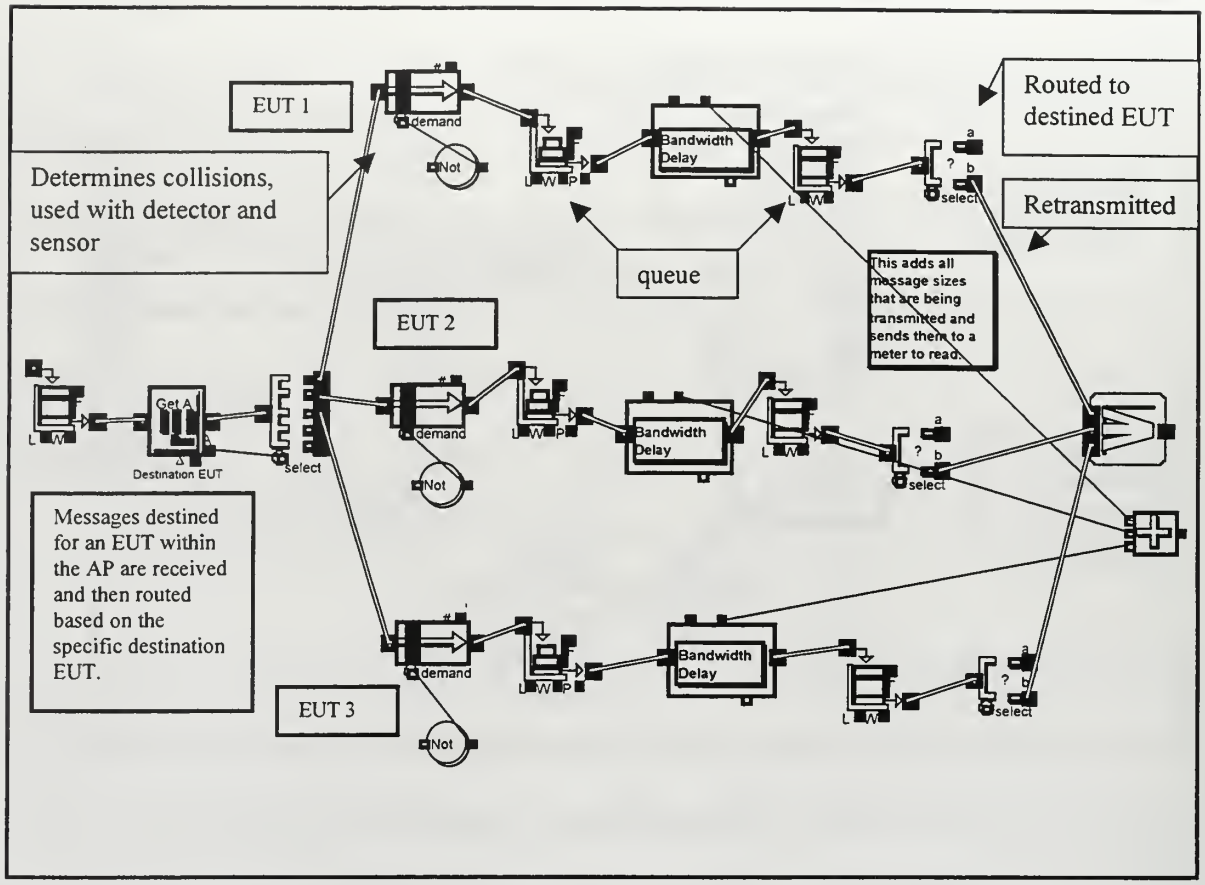
EUT 1
Determines collisions, used with detector and sensor
Routed to destined EUT
Retransmitted
queue
This adds all message sizes that are being transmitted and sends them to a meter to read.
EUT 2
Get A
Destination EUT
Messages destined for an EUT within the AP are received and then routed based on the specific destination EUT.
EUT 3
demand
Not
Bandwidth Delay
select

Figure 10. Flow of Internal Messages within Access Point

Internal messages must be sensed and detected. Both the sensor and detector work off of the bandwidth delay hierarchical block. If a message is being delayed, the sensor and detector will be transmitted the information. The sensor ensures that an EUT does not attempt to send a message to a busy EUT; however, there may be an instance when the sensor action is completed simultaneously by different EUTs. This will result in a collision. The detector determines if a collision has occurred. The logic of the sensor and the detector is provided in Appendix A.

If a collision occurs the message has to be retransmitted. A retransmitted message is sent to the identified catch block at the Access Point, which was previously noted in Figure 7, and then follows the same path through the access point once again.

The next step for a message, once it makes it through the access point without undergoing a collision, is depicted in Figure 11. The type of message is determined and then routed to the appropriate throw block. This ensures that the RTS/CTS protocol is adhered to and the next message in the sequence is generated.

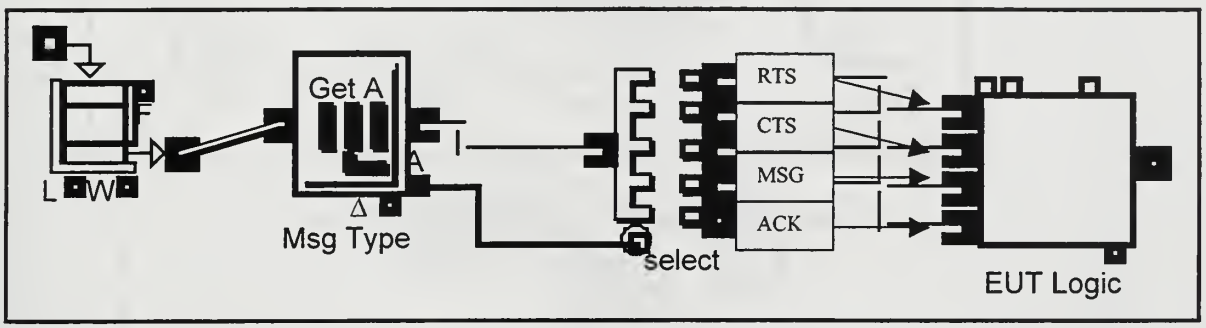

Figure 11. EUT Routing

2. Description of an AN/VRC-99A

Figure 12 depicts the high level view of the AN/VRC-99A. The AN/VRC-99A was modeled utilizing Time Division Multiple Access. The catches represent the different links that have been provided a time slot. These initial catches are dependent on the architecture employed and must be established as the model is developed. The destination of messages as they leave the AN/VRC-99A is also dependent on the architecture. A routing table identifying the next path of a message must be incorporated.

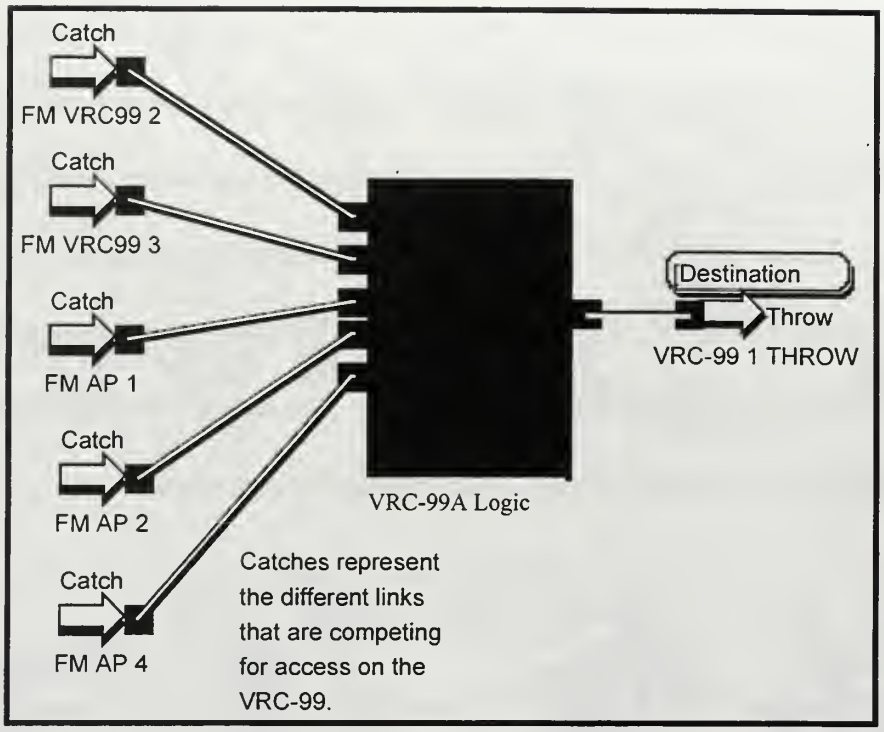

Figure 12. High Level View of AN/VRC-99A

Figure 13 provides the details of the AN/VRC-99A and implementation of TDMA. Once a user's allocated time slot is received, access is available to send message traffic. Time slots are determined by dividing the largest message size by the bandwidth. This ensures that the link will stay open long enough to transmit the appropriate message. Each user has equal access to the VRC-99A and can transmit whenever their allocated time slot is available. After a message is released, it travels across the communication link and undergoes a bandwidth delay; utilizing the equation of message size divided by the bandwidth.

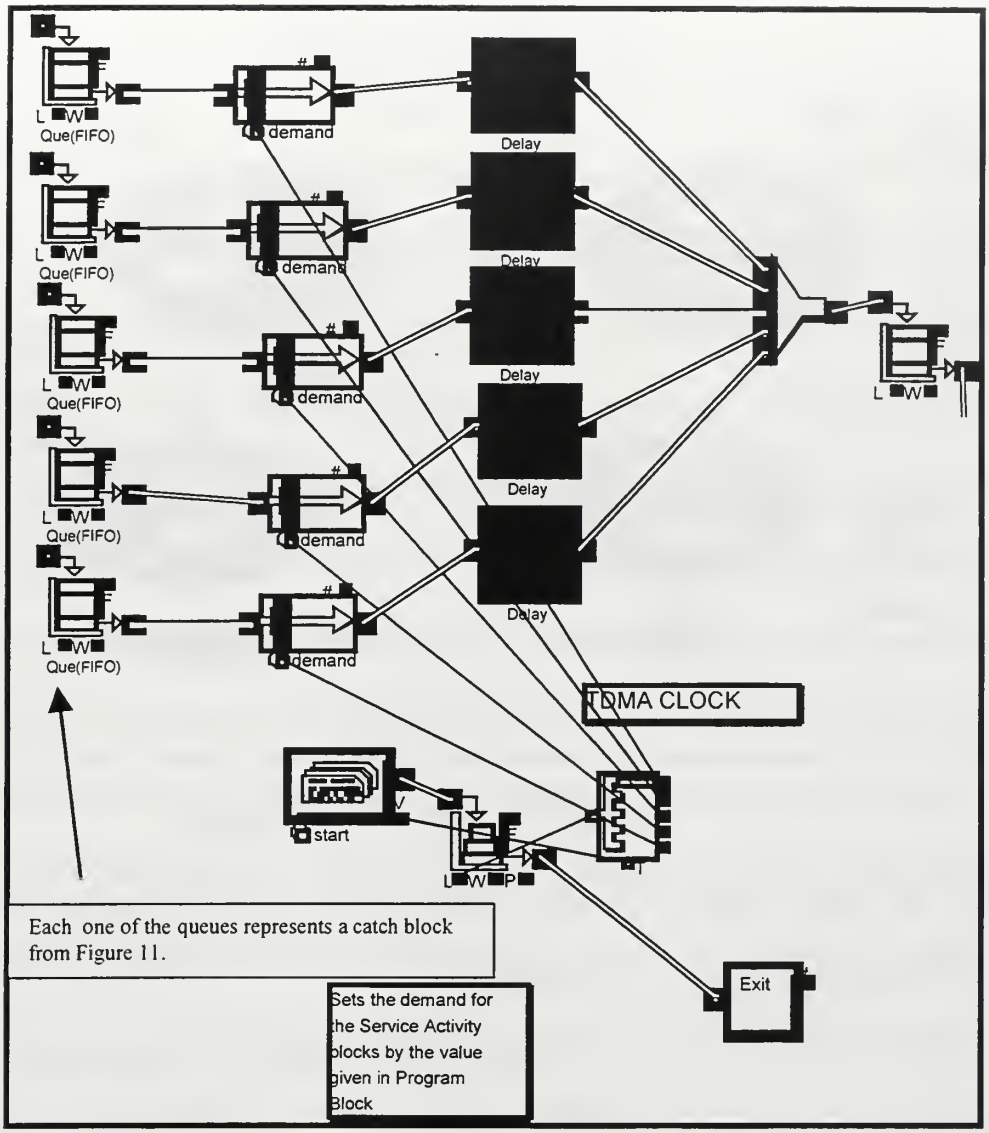
Que(FIFO)
demand
Delay
TDMA CLOCK
start
Exit
Each one of the queues represents a catch block from Figure 11.
Sets the demand for the Service Activity blocks by the value given in Program Block

Figure 13. Detailed View of AN/VRC-99A

A. INITIAL NETWORK CONFIGURATION

The first network configuration chosen was based on the ELB demonstration. Figure 14 depicts the basic architecture that was modeled. Appendix B is the routing table used to determine the flow of traffic across this network. This topology was used to

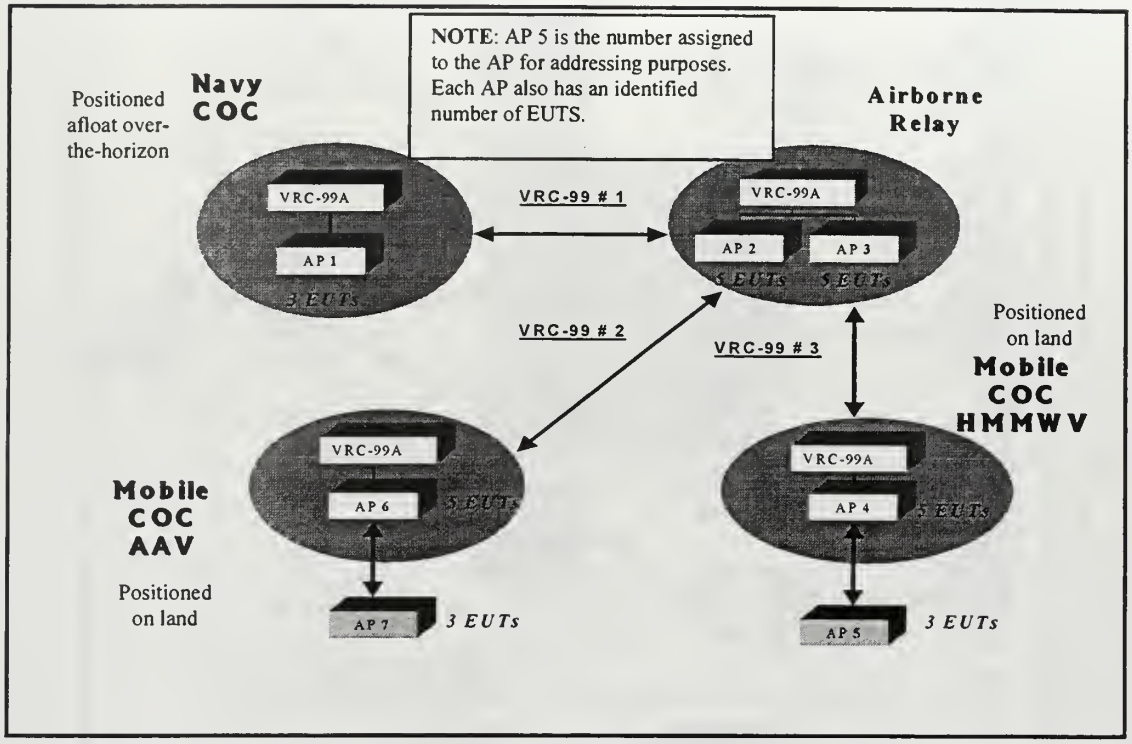

Figure 14. Initial ELB Architecture

validate the basic network operating characteristics and connectivity between the AN/VRC-99A and the WaveLAN equipment.

The AN/VRC-99A and the WaveLAN access points are connected using a router. There are seven access points and a total of twenty-nine EUTs. A number identifies each access point for addressing purposes, i.e., AP 5 is access point number five. Additionally, each access point is assigned a certain number of EUTs. The number of EUTs is listed next to the block representing an access point. To put this diagram into proper perspective and scale, the Navy COC is communicating from over-the-horizon and cannot connect directly to the Mobile COCs. Messages must travel through the airborne relay. The AN/VRC-99s represent the long-range links.

B. INITIAL NETWORK TEST RESULTS

A simulation was run using the initial network depicted in figure 14. The simulation ran for 8 hours (simulation time), which constituted about 525 seconds of real (clock) time. VTC was introduced at two separate points. The first was initiated at the very onset of the simulation and ran for 300 seconds and the second was initiated at or about 100 seconds and concluded at or about 300 seconds. The following charts show some significant spikes in time delay during the VTC, but tapered off considerably to about .3 - .5 seconds delay. This would seem consistent, as each message must compete for access at the VRC-99A's and the bandwidth delay chokepoints within the access points. Both VTC and Voice were given highest priority and thus were granted access accordingly. All communications that started and ended within a local access point showed a delay equal to the message size divided by the bandwidth. This is consistent with the communications theory. The following charts depict the delays according to time for each EUT and AP. The vertical axis depicts the delay incurred for each message. The horizontal axis displays the simulation time. Each plotter is capable of reading up to 4 EUTs. A legend is located in the lower half of the plotter and indicates which EUTs are being measured. This is usually in color and can be easily discerned, however for our purpose it is not necessary to distinguish between them as the report data contains this information and is readily available in Appendix D. An electronic copy of all data can be obtained from the Thesis Advisors designated on the cover page.

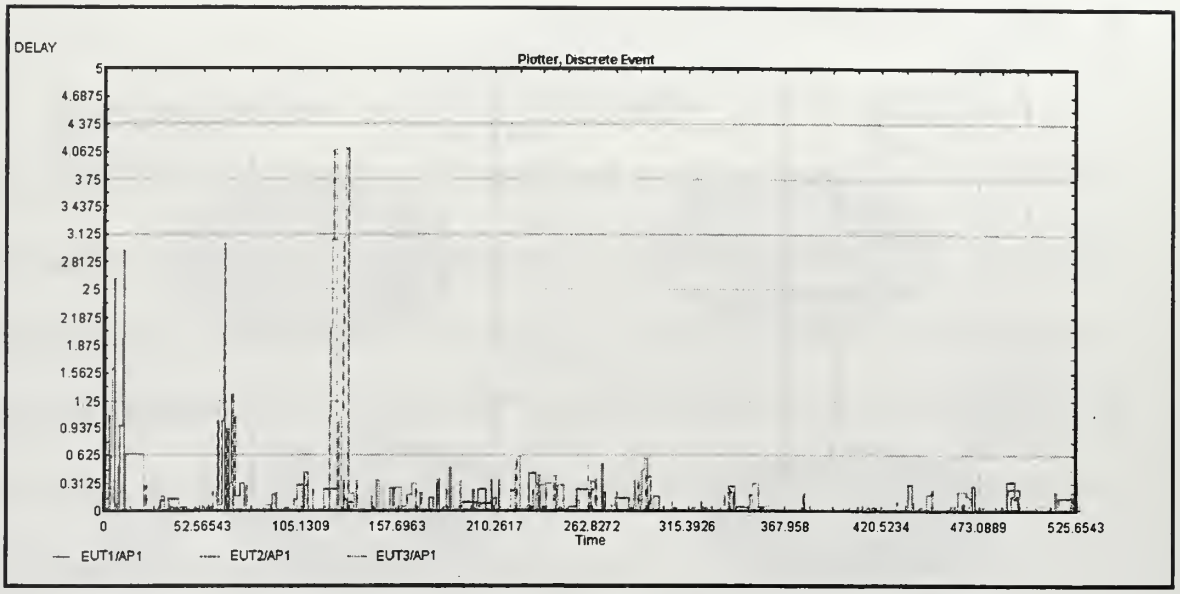

Figure 15. Delay within AP 1

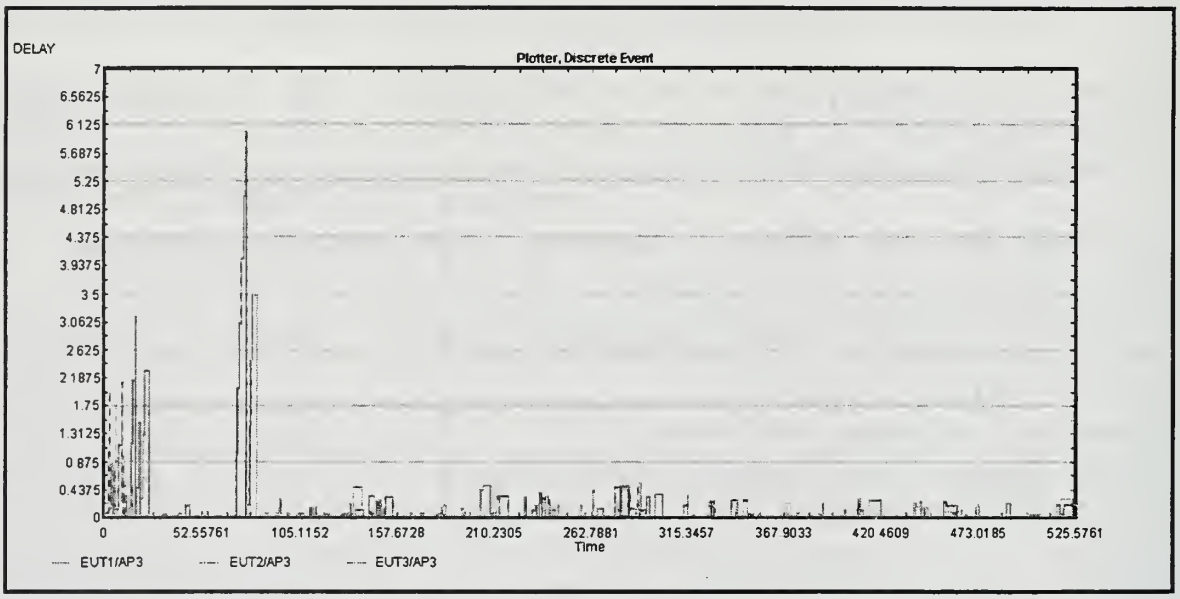

Figure 16. Delay within AP 3

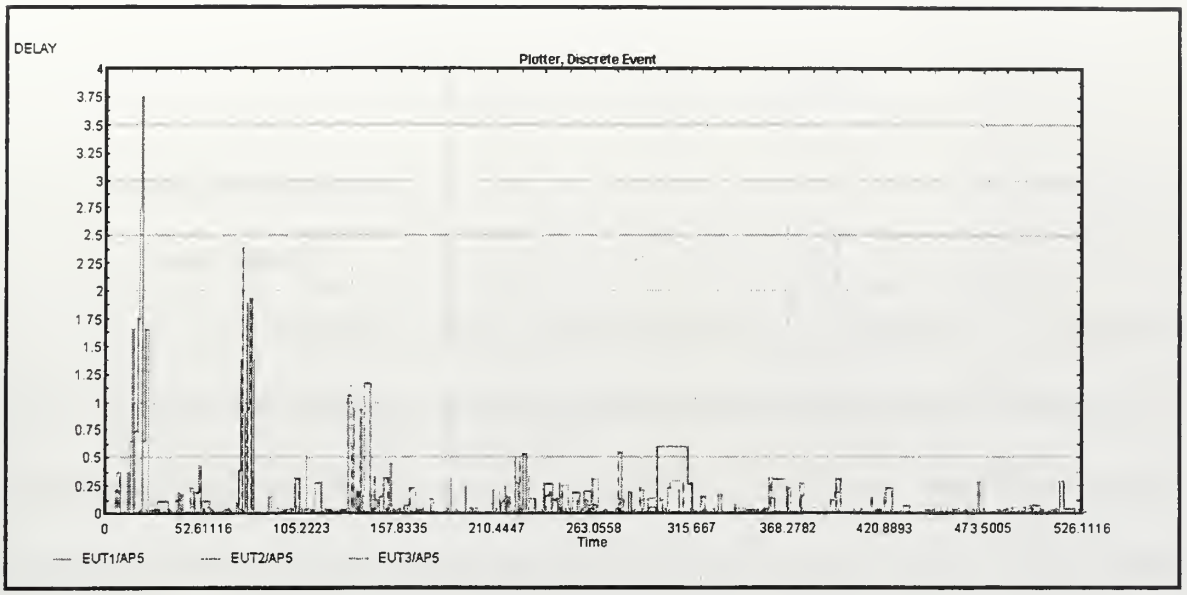

Figure 17. Delay within AP 5

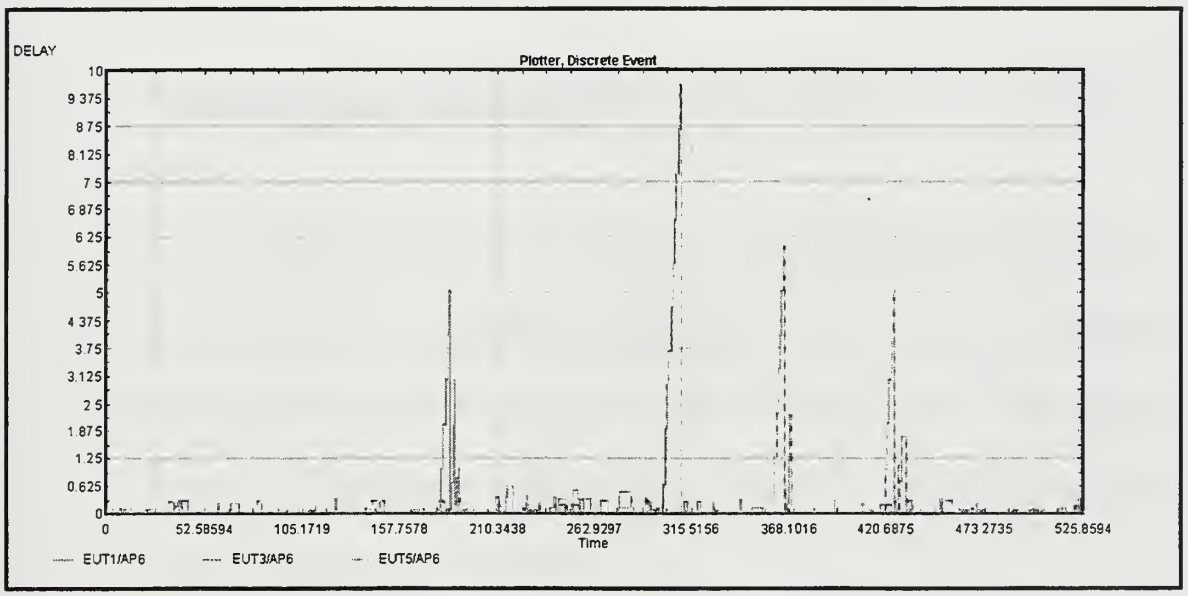

Figure 18. Delay within AP 6

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IV. SCALED NETWORK MODELING

A. SCALED NETWORK

1. Assumptions

To scale the model for a Marine Expeditionary Brigade sized-force, we must make certain assumptions about the size and make-up of the Marine forces. We based our assumptions regarding the strength requirements on the Center for Naval Analysis document Project Culebra: Establishing the MEF (afloat) in 2010. [Ref 11] Three critical assumptions adopted from this publication were:

- The units, numbers of personnel, and types of equipment that make up a MEF (FWD).
- MEF (FWD) is comparable to MEB in numbers of personnel, and types of equipment
- Instead of traditional amphibious operations, in 2010 the Marine Corps will use an OMFTS concept, which emphasizes fire-power and maneuver and de-emphasizes large-scale build up ashore of supplies and combat service support. This emphasis is covered in the literature review of network operations in the 21st century to gain and maintain information superiority.

2. MEB Force Structure

Initial modeling and scalability consisted of determining the number of communication links along with the numbers of Access Points and End User Terminals

needed to sustain a MEB sized force. The ship-to-shore communications utilized an Airborne Relay, via VRC-99A radios to each of the Force Reconnaissance Companies, the Marine Expeditionary Brigade (MEB) Headquarters (HQ) and the Regimental Landing Team (RLT) HQ. The MEB HQ and the RLT HQ were the primary nodes that maintained communications with the COC afloat. The scaled simulation model represents these Headquarters with Access Points consisting of ten End User Terminals. The model also represents the Force Reconnaissance Companies with Access Points consisting of three End User Terminals. The MEB and RLT Headquarters Access Points support communications links to three Infantry Battalions, six Combat Service Support Units, and a Artillery Battalion all via VRC-99A radios. The simulation model represents each of the Infantry Battalions, as well as the Artillery Battalion, with an Access Point consisting of ten and five End User Terminals, respectively. The model also represents the six Combat Service Support Units with Access Points consisting of three End User Terminals. (See Figure 19).

Both the MEB and the RLT COC's Access Points support wireless communications via WaveLAN to each of the three following unit's headquarters: Truck Company, Communications Company, and Maintenance Company. Each of the Infantry Battalion Access Points supports three Infantry Company Access Points via WaveLAN. All Infantry Company Access Points have five End User Terminals. The Infantry Company supports communication links to five Access Points belonging to the following units: AAV, LAAD, Tanks, Engineers, and LAR. Each of these units' Access Points consists of three End User Terminals. The scaled MEB architecture contains a total of

202 End User Terminals. This entire command and control communication network is illustrated in Figure 19. Although this scaled model will not fit each and every deployed MEB force structure and the numbers of EUTs and APs may vary slightly, this thesis serves to model the majority of the MEB structure needed to operate under OMFTS in an ELB environment.

B. SCALABILITY ARCHITECTURE

Figure 19 represents a snap shot of the Communication structure outlined in the Center for Naval Analysis document mentioned previously. [Ref 11] This structure is in compliance with the assumptions outlined above along with the current C4I structure utilized throughout Marine Forces. The Marine Expeditionary Brigade below depicts those forces operating in an OMFTS environment. End User Terminals are spread evenly throughout the Ground Combat Element (GCE), Command Element (CE), Aviation Combat Element (ACE), and the Brigade Service Support Group (BSSG).

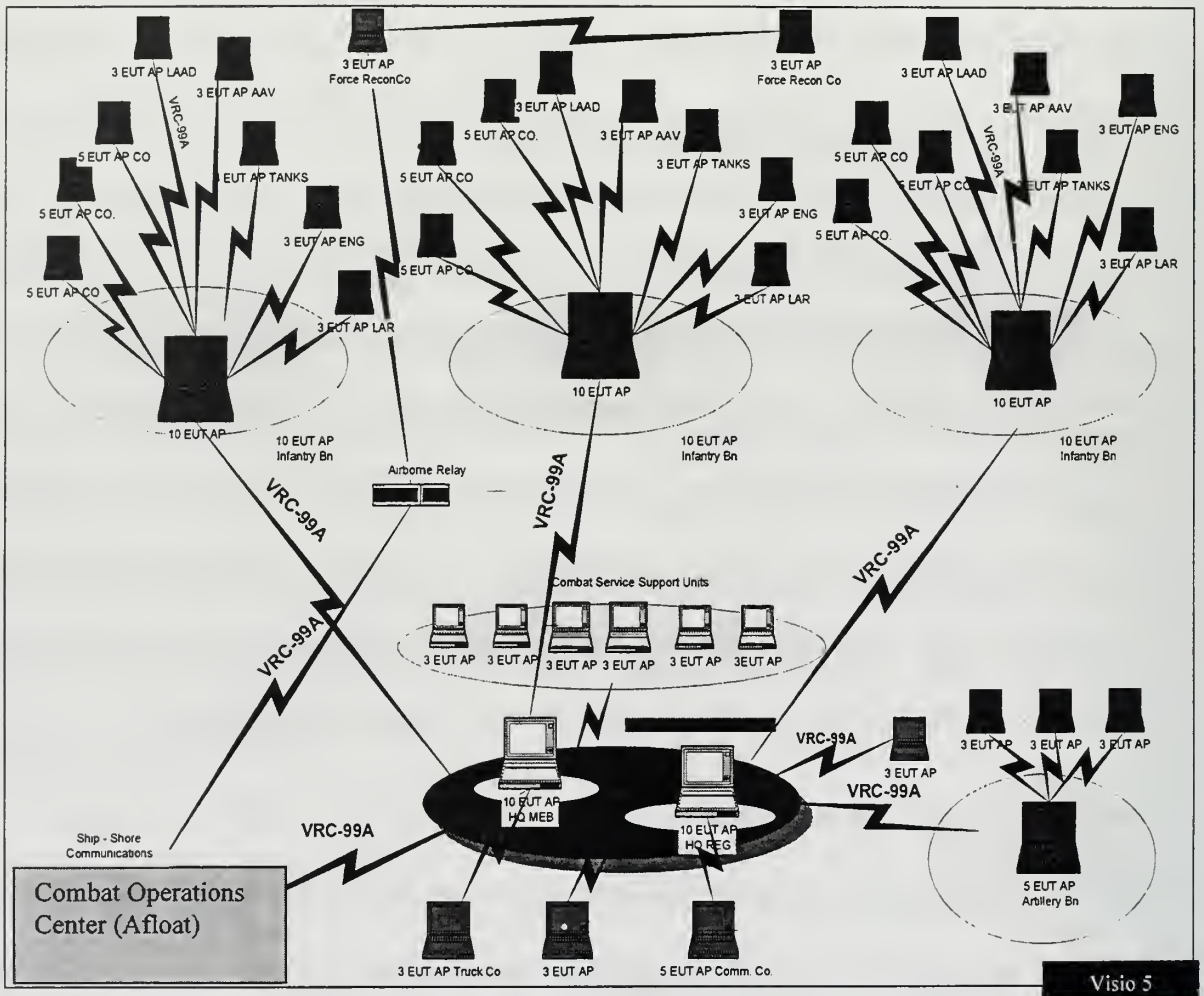


Figure 19. Marine Expeditionary Brigade Communication Architecture

V. CONCLUSIONS AND RECOMMENDATIONS

A. SCALABILITY SIMULATION RESULTS

A total of four simulation runs were conducted. The data is summarized in the plots and charts provided in Appendix D; the charts contain detailed message traffic reports for randomly selected EUT's. Run 0 was programmed for duration of 1000 simulation seconds, which took approximately 12 hours to accomplish. All of the EUT's for Run 0 and Run 1 were configured to simulate an architecture that would use a 2MB PCMCIA card within the EUT's, thereby limiting the throughput to 2 MB. Video Teleconference was initiated within AP 1, Combat Operations Center, and was to begin at 500 seconds with its destination as AP 5, Regimental Headquarters. Little to no significant delay was experienced although a small spike is readily noticeable at approximately this time. (Refer to Figure 20).

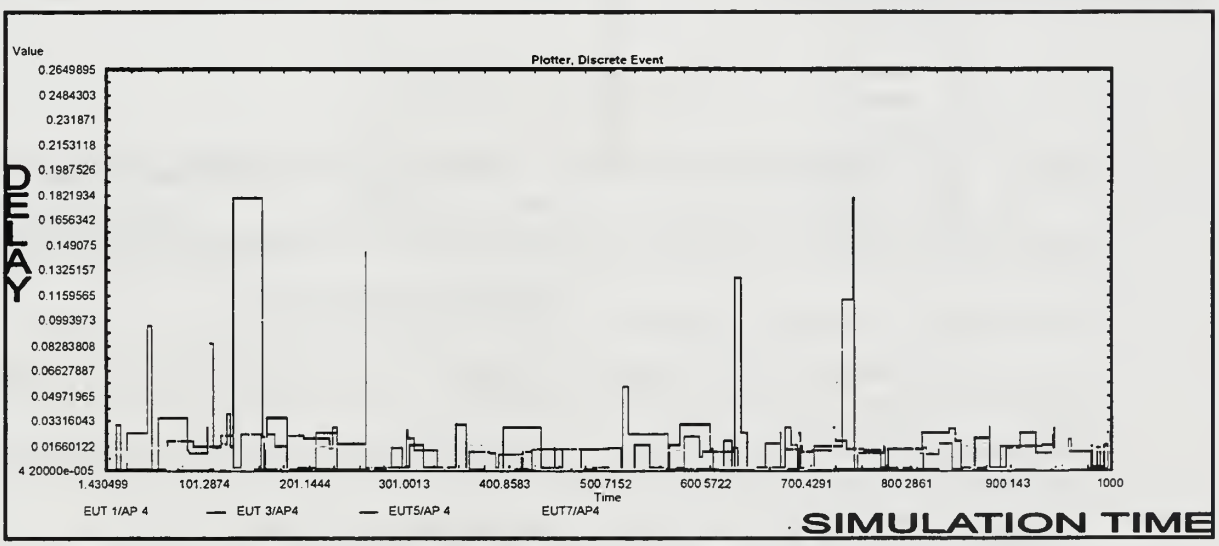


Figure 20. Run 0, AP 4

The second run consisted of relatively the same constraints as before with the exception that the run time was 1200 simulation seconds. Two separate VTC communications were conducted. The first VTC was initiated at AP 5, a Regimental Headquarters, and addressed to AP 31, a Battalion Headquarters. The second VTC was initiated at AP1, COC, and addressed to AP 5.

In this simulation, an increase in delay can readily be seen at the approximate times that the VTC was initiated. Other than these instances, the delays were nominal. (Refer to Figure 21)

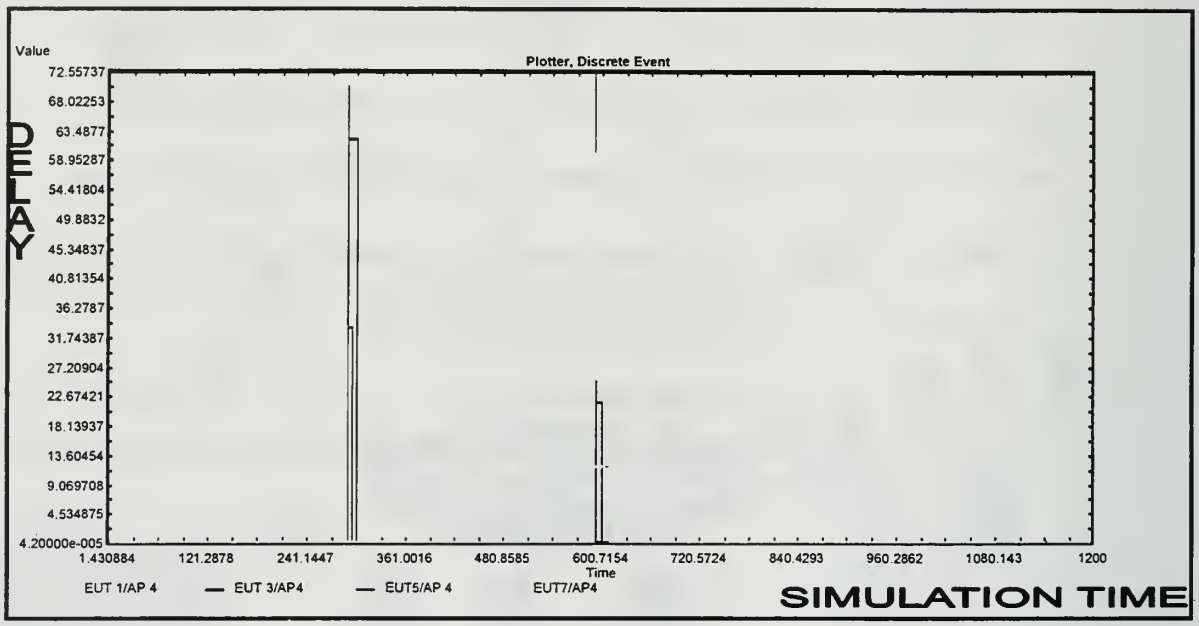


Figure 21. Run 1, AP 4

The second pair of runs was identical to the first pair with the exception of the throughput allowed at the EUT's. This was elevated to 11 MB to simulate the current capability of the WaveLAN wireless communications system. From Figure 21 it is readily apparent that the overall delay was much less than the architecture that simulated a 2MB

throughput. Notice that the delay spike is numerically smaller and that it is further to the left on the time scale. This is consistent with communications theory. As expected, there is a much smaller delay within the EUT with the 11 MB card as compared to the previous simulation run utilizing a 2MB card. The message is spending less time within the destination EUT and an acknowledgment is initiated much sooner. Refer to Figure 22.

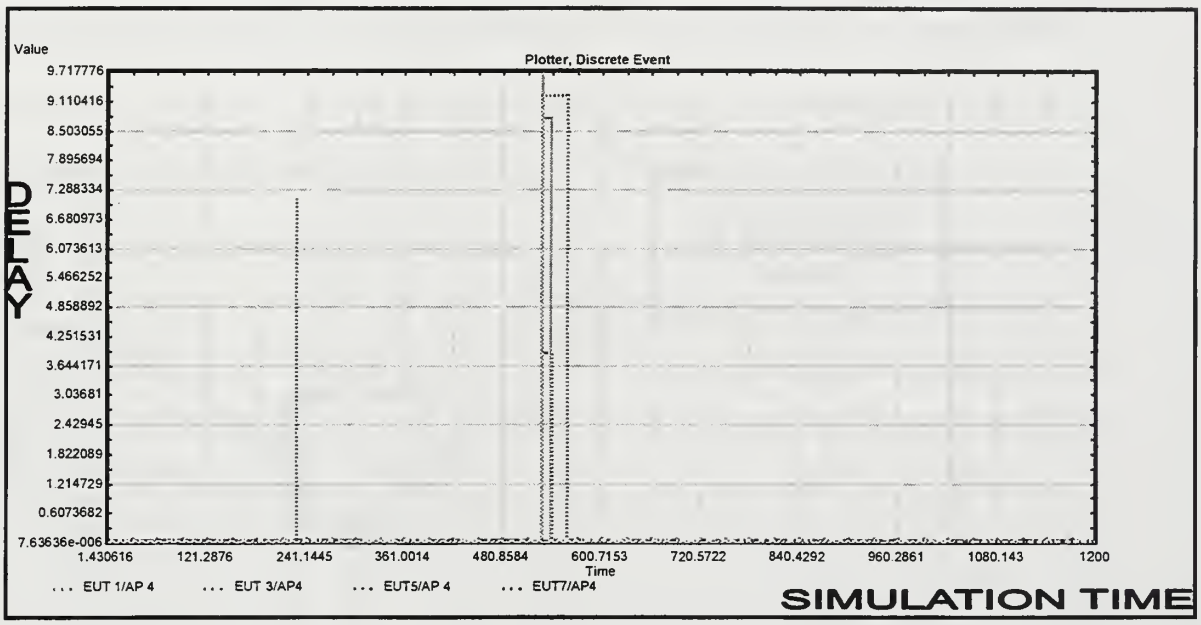


Figure 22. Run 3, AP 4

The final results of the simulation show that the scaling of the wireless communications architecture to a size comparable to that of a Marine Expeditionary Brigade resulted in no significant increase in delay. However, it does show that there is a decrease in performance when VTC is employed. This is to be expected since other Access Points are competing for a time slot within the VRC-99A. There were times when the architecture showed increased delay without VTC. These were primarily due to an Access Point receiving heavy traffic with larger type 8 messages (5 Paragraph Orders) than

usual. This is an exception rather than the rule, as the type of messages loaded is sent randomly and the probability of this actually occurring is low.

B. ALL WAVELAN SIMULATION RESULTS

A secondary research objective was to determine the feasibility of an all WaveLAN system, essentially excluding the VRC-99A from the simulation. A portion of the final model was configured using 3 Access Points and 1 VRC-99A. Figure 23 depicts the configuration used.

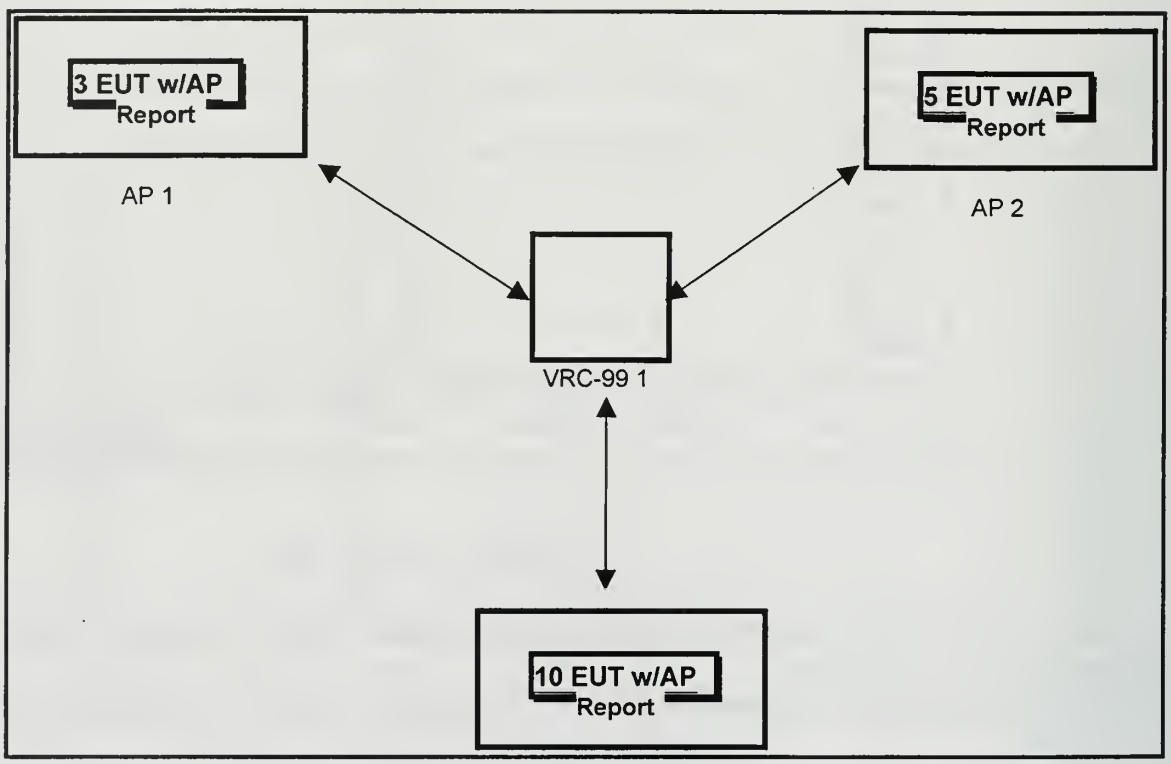


Figure 23. WaveLAN/VRC-99A Configuration

A Run was executed for 1500 simulation seconds, including 3 Video Teleconferencing activities. The first and second VTC's was initiated at 200 and 600

seconds, respectively, within AP 2 and were destined to AP 4. The third VTC was initiated at 1000 seconds within AP 4 and was destined to AP 1.

The message loading within the AP's was identical to that previously used within the large model, with the exception of message frequency. It was programmed to initiate messages at 10 times the rate used before; roughly 1 message sent every second. This was done to load the system with such a capacity that any delays would be more apparent and easier to calculate. Figure 24 depicts the delays encountered during Run 4.

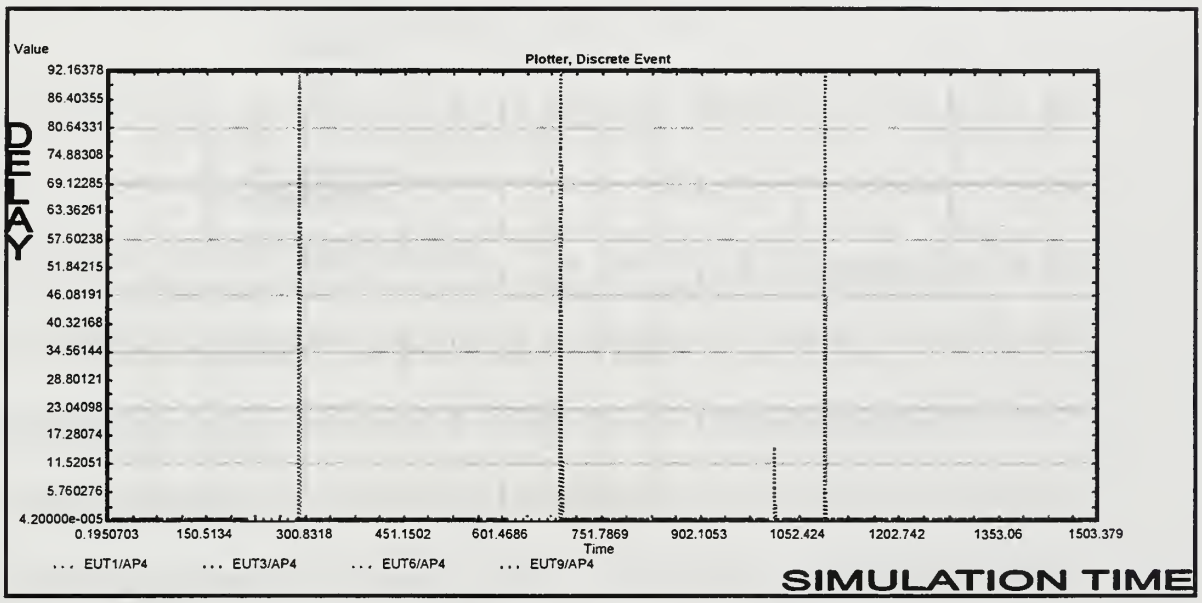


Figure 24. Run 4, AP 4

This same model was then modified in Run 5, so that all VRC-99A's were replaced with Access Point's acting as repeaters. This "repeater" would solely transmit the information to the appropriate AP; no message generation would be initiated. A total of 4 "repeaters" were swapped for one VRC-99A. Figure 25 depicts this configuration.

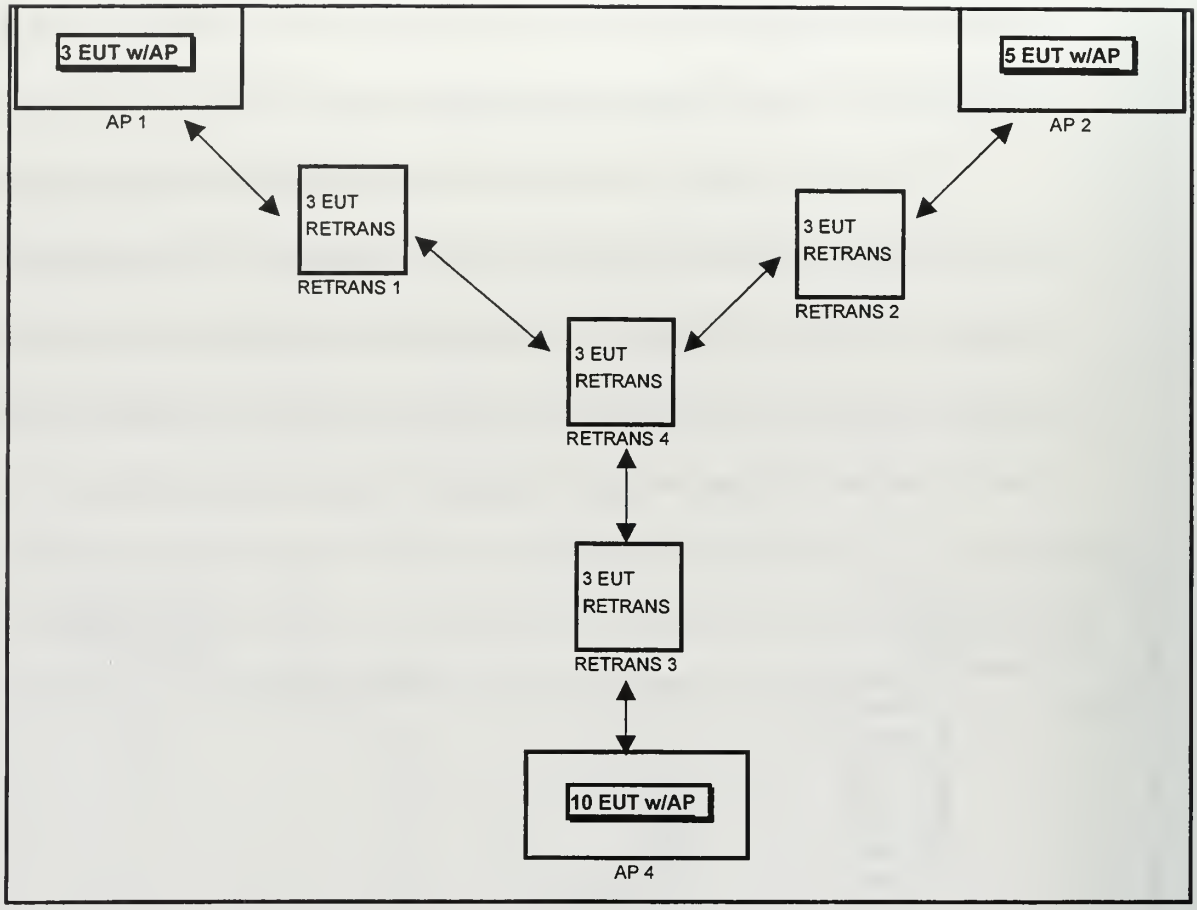


Figure 25. All WaveLAN Configuration

Multiple repeaters were necessary to cover the long-range distance that was previously covered by the VRC-99A. The Run would be identical in all aspects to the WaveLAN/VRC-99A configuration. Figure 26 depicts the delays found within Run 5.

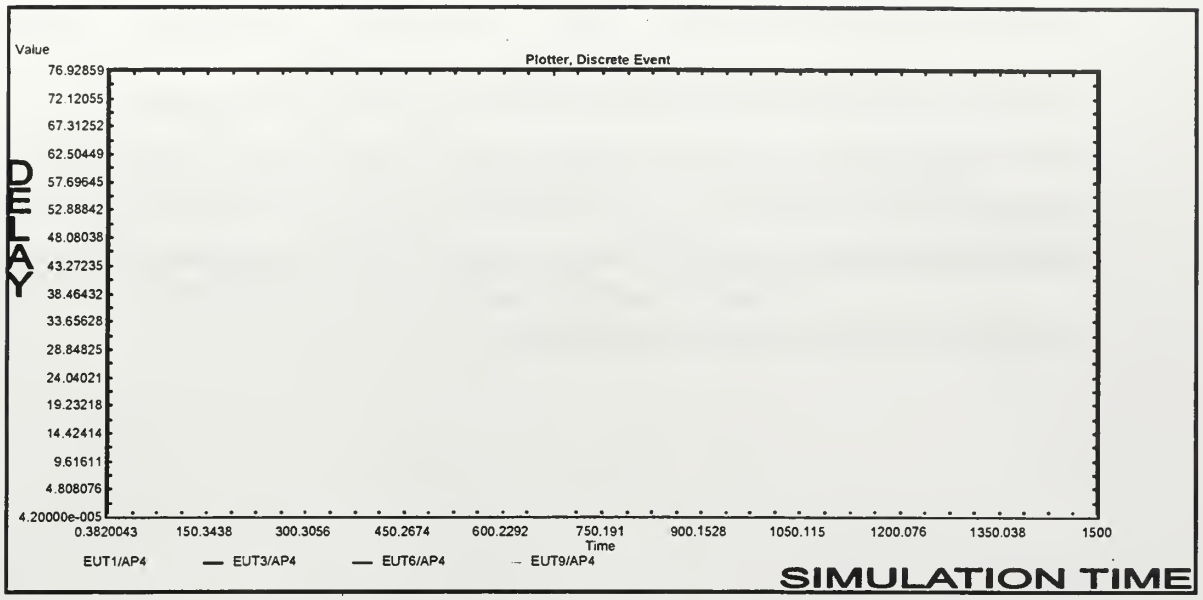


Figure 26. Run 5, AP 4

According to the data, the overall delays associated with the VTC were less in this configuration. This can be attributed to the fact that the "retrans" AP's add no delay to the message as it is routed to its next destination. The data does in fact suggest that an all-WaveLAN architecture is possible. However, it should also be noted that it would take a considerable amount of extra radio assets to fill the role of a retransmission site, as well as extra personnel and logistics to support such an operation.

C. FUTURE AREAS OF RESEARCH

Although this thesis addresses the delays that would be inherent in a large-scale model, it should be noted that dynamic roaming AP's were not addressed. The assumption is that the AP is relatively fixed and that the EUT's are free to roam about. This is much akin to the commercial office environment where computers may be moved to new

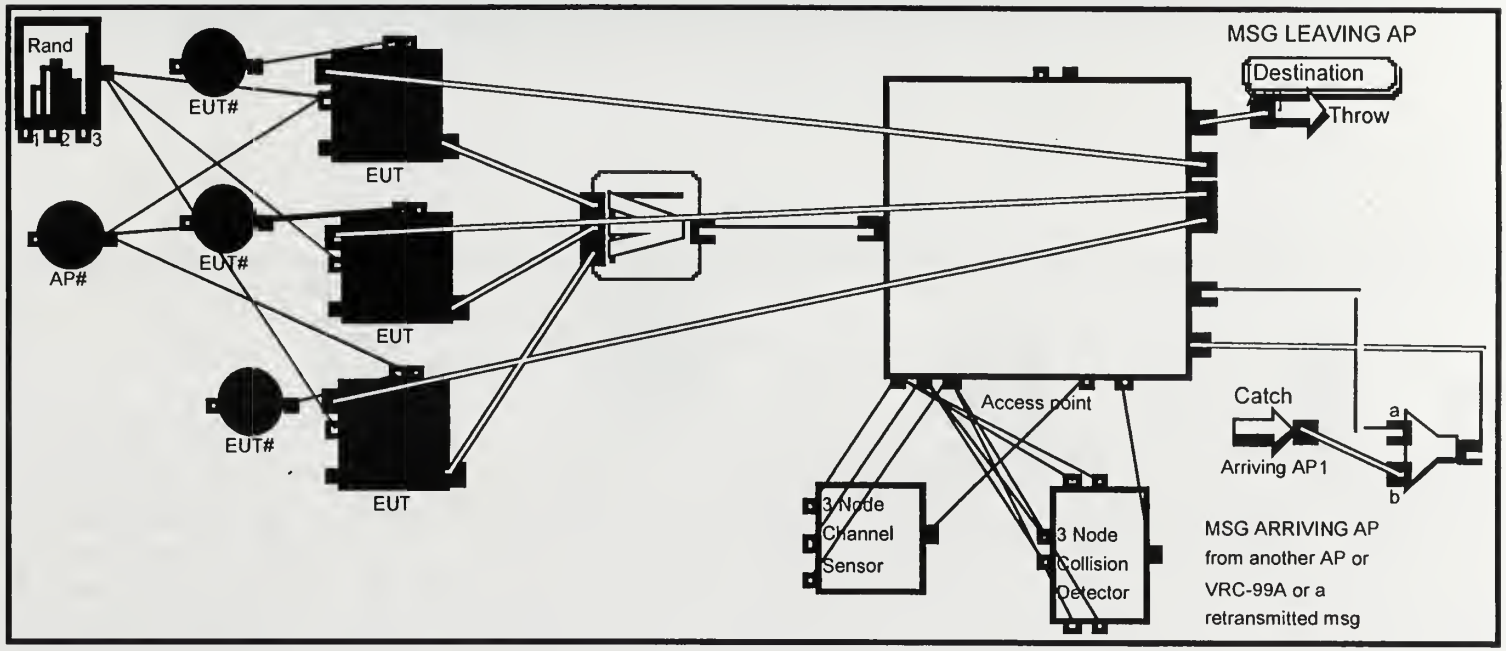
locations, but the AP's are fixed within the office space. Roaming AP's create addressing problems that are still being addressed within the private and DoD sectors.

Ideally once the above problem has been addressed, addressing roaming AP's could then be incorporated within this model's logic. This would allow for a more dynamic model and possibly resolve future initiatives.

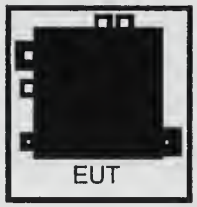
APPENDIX A. EXTEND MODEL

This appendix contains the low-level design of the ELB ACTD network model. Each block is displayed along with the detailed design of the block on the ensuing page. All of the blocks displayed are hierarchical blocks designed to layer the model. The detailed low-level design shows the functionality within the model.

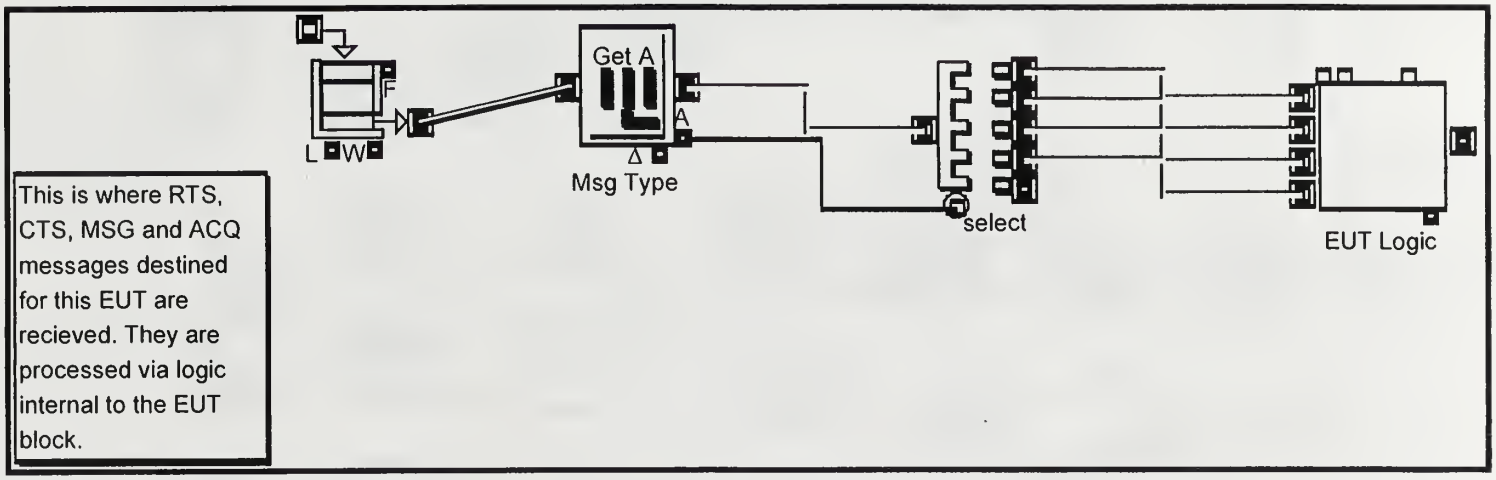
3 EUT Access Point



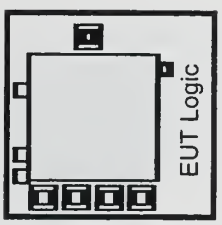
3 EUT Access Point

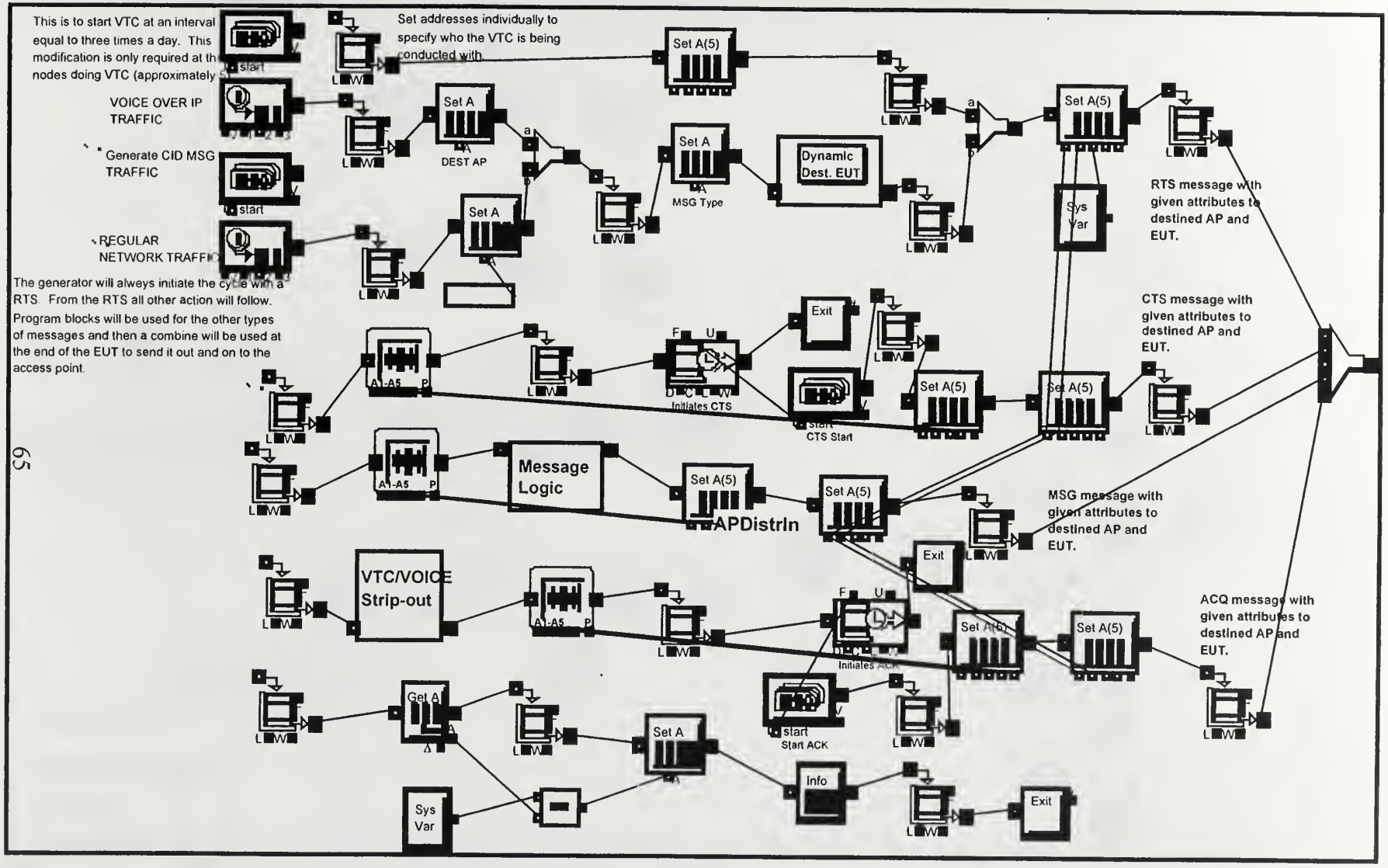


End User Terminal


This is where RTS, CTS, MSG and ACQ messages destined for this EUT are recieved. They are processed via logic internal to the EUT block.
F
L W
Get A
A
Δ
Msg Type
select
EUT Logic

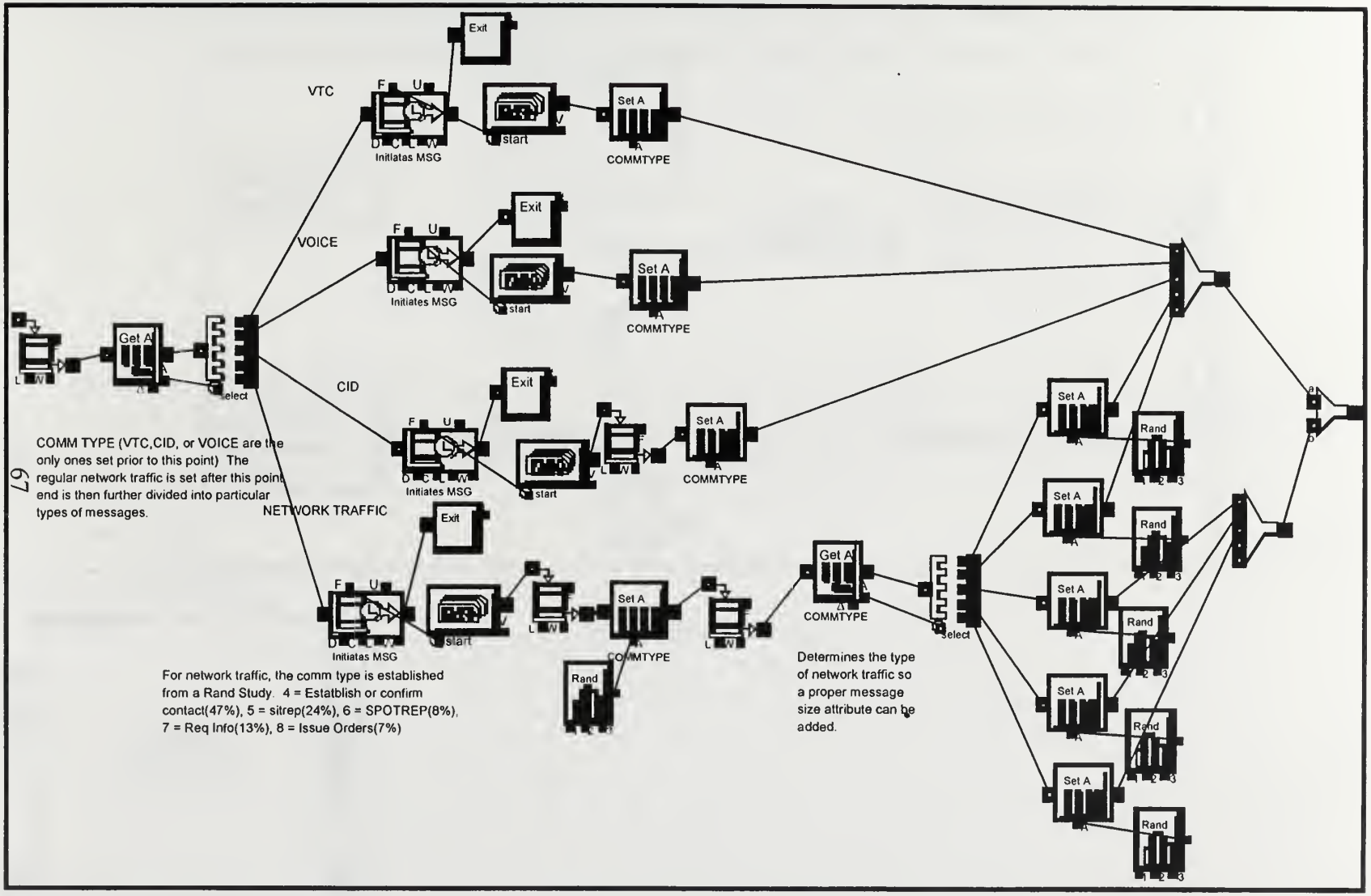
EUT Message Routing


EUT Logic

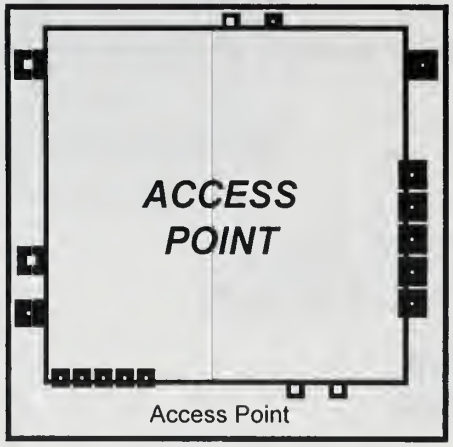

This is to start VTC at an interval equal to three times a day. This modification is only required at th nodes doing VTC (approximately
VOICE OVER IP TRAFFIC
Generate CID MSG TRAFFIC
REGULAR NETWORK TRAFFI
The generator will alweys initiate the cycle with a RTS. From the RTS all other action will follow. Program blocks will be used for the other types of messages and then a combine will be used at the end of the EUT to send it out and on to the access point.
Set addresses individually to specify who the VTC is being conducted with
Set A
DEST AP
Set A
MSG Type
Set A(5)
Dynamic Dest. EUT
Sys Var
RTS message with given attributes to destined AP and EUT.
CTS message with given attributes to destined AP and EUT.
MSG message with given attributes to destined AP and EUT.
ACQ message with given attributes to destined AP and EUT.
Exit
Initiates CTS
CTS Start
Message Logic
APDistrIn
VTC/VOICE Strip-out
Initiates ACK
Start ACK
Info
Get A
Sys Var

3 EUT Wireless Logic

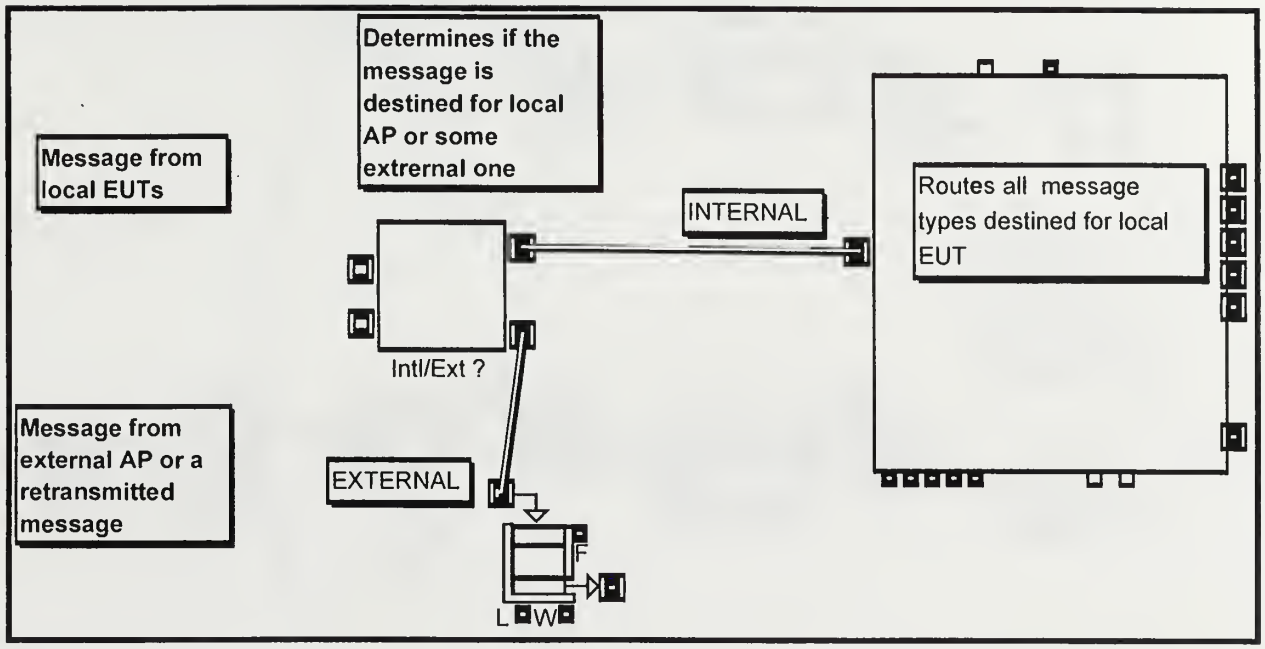
Message Logic


VTC
VOICE
CID
NETWORK TRAFFIC
Exit
Initiatas MSG
Initiates MSG
start
Set A
COMMTYPE
Get A
Select
Rand
COMM TYPE (VTC,CID, or VOICE are the only ones set prior to this point) The regular network traffic is set after this point and is then further divided into particular types of messages.
For network traffic, the comm type is established from a Rand Study. 4 = Estatblish or confirm contact(47%), 5 = sitrep(24%), 6 = SPOTREP(8%), 7 = Req Info(13%), 8 = Issue Orders(7%)
Determines the type of network traffic so a proper message size attribute can be added.

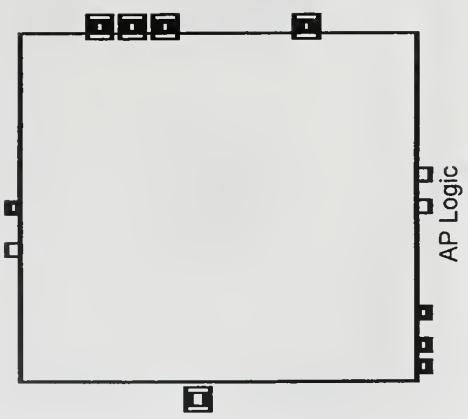
Message Logic Detail

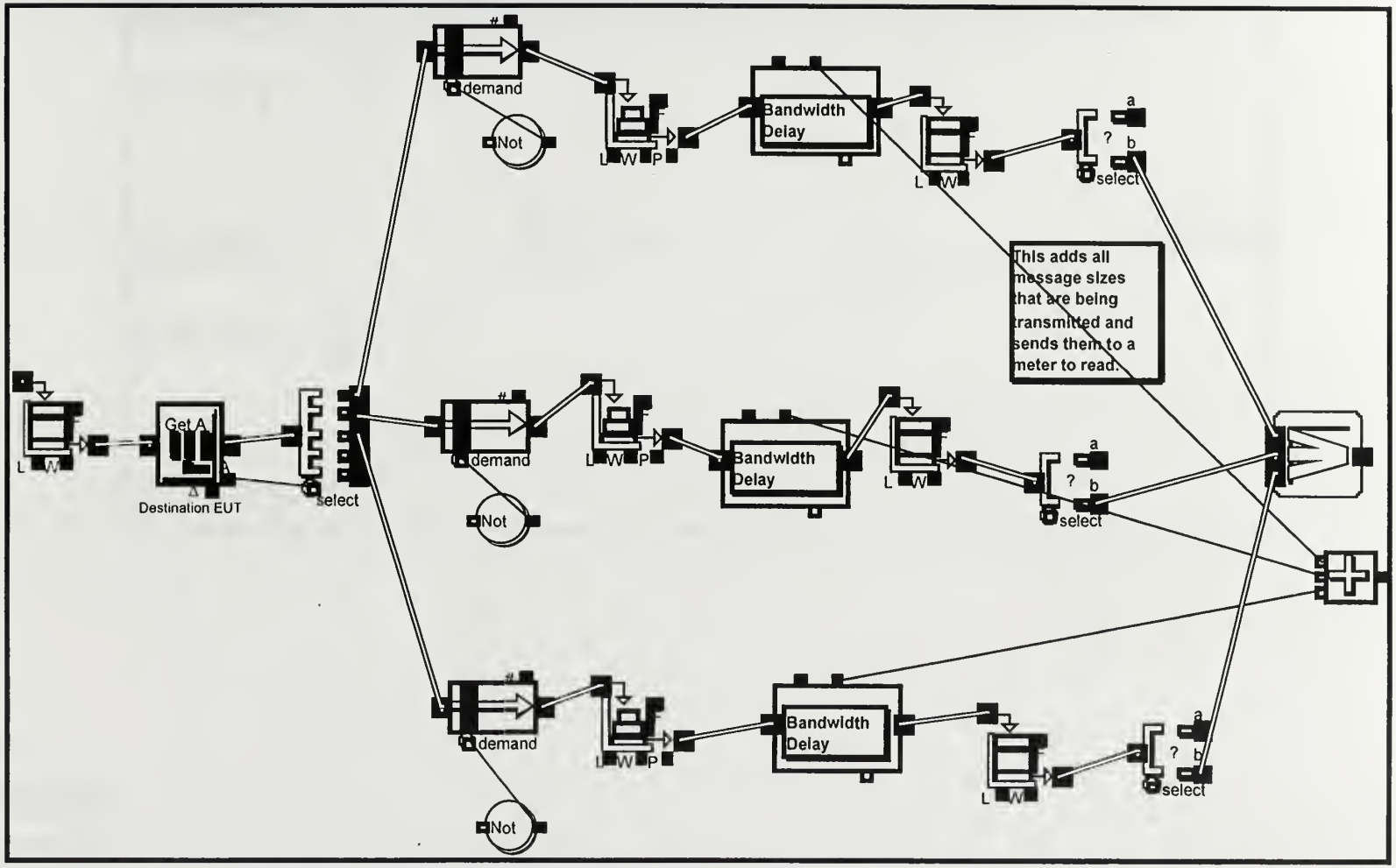


Access Point

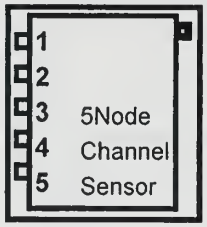

Determines if the message is destined for local AP or some extrernal one
Message from local EUTs
INTERNAL
Routes all message types destined for local EUT
Intl/Ext ?
Message from external AP or a retransmitted message
EXTERNAL
F
L
W

Routing with in Access Point

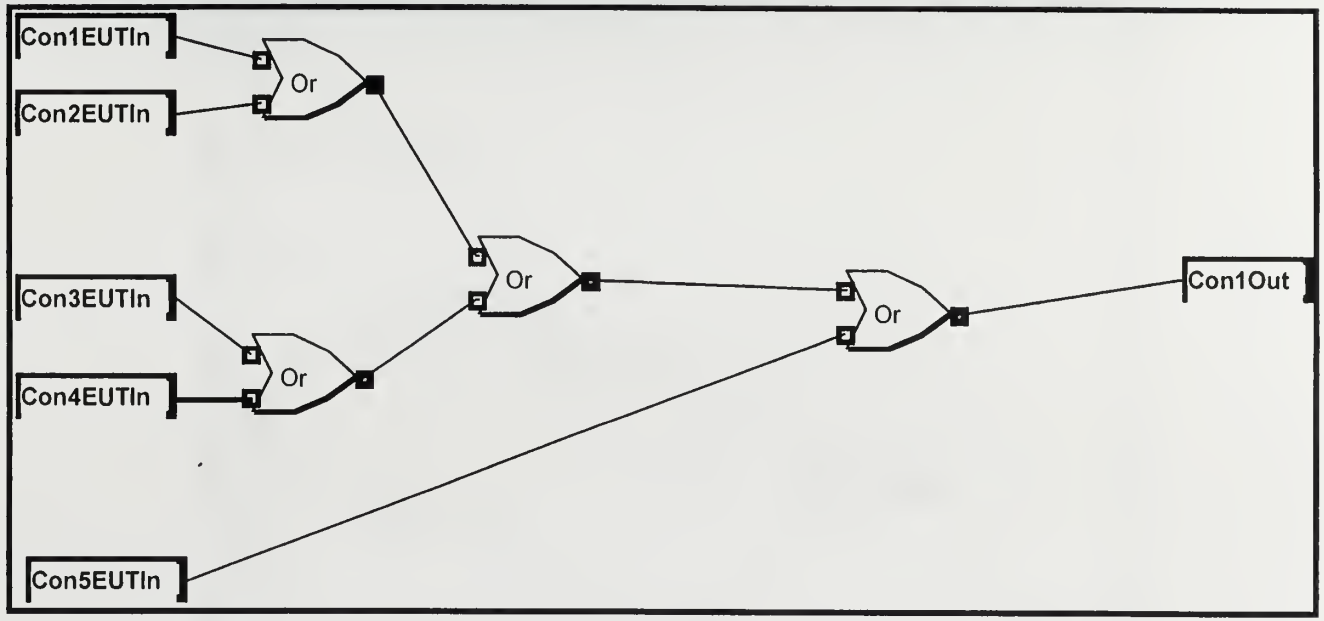

AP Logic



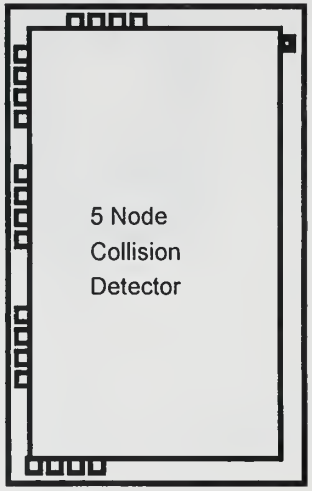
Detailed Routing with in Access Point. Shows Bandwidth Delay Blocks



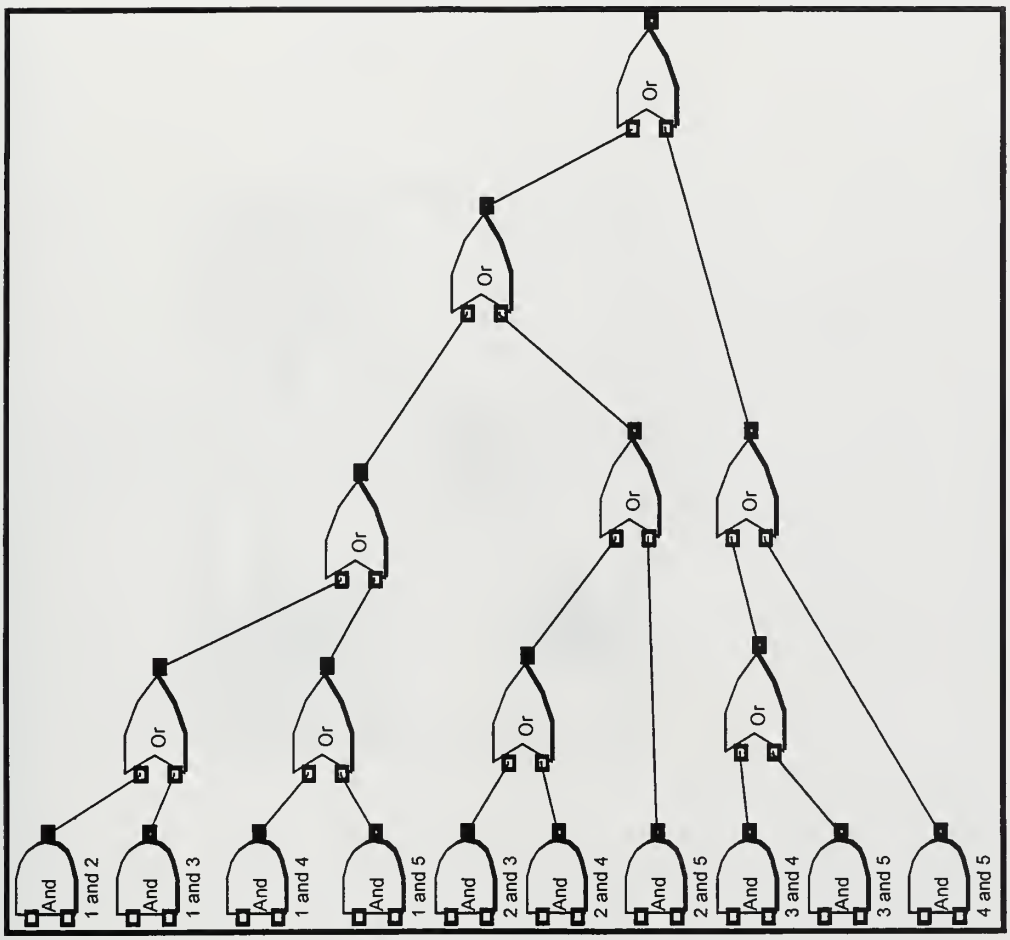
Sensor


Con1EUTIn
Con2EUTIn
Con3EUTIn
Con4EUTIn
Con5EUTIn
Or
Or
Or
Or
Con1Out

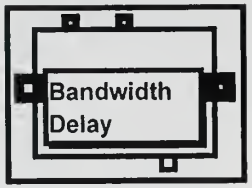
5 EUT Sensor



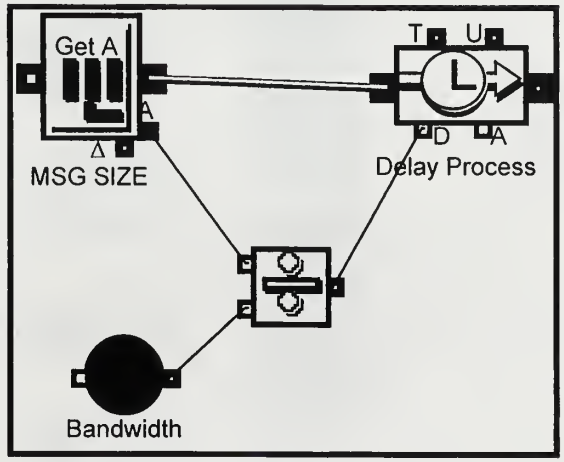
Detector



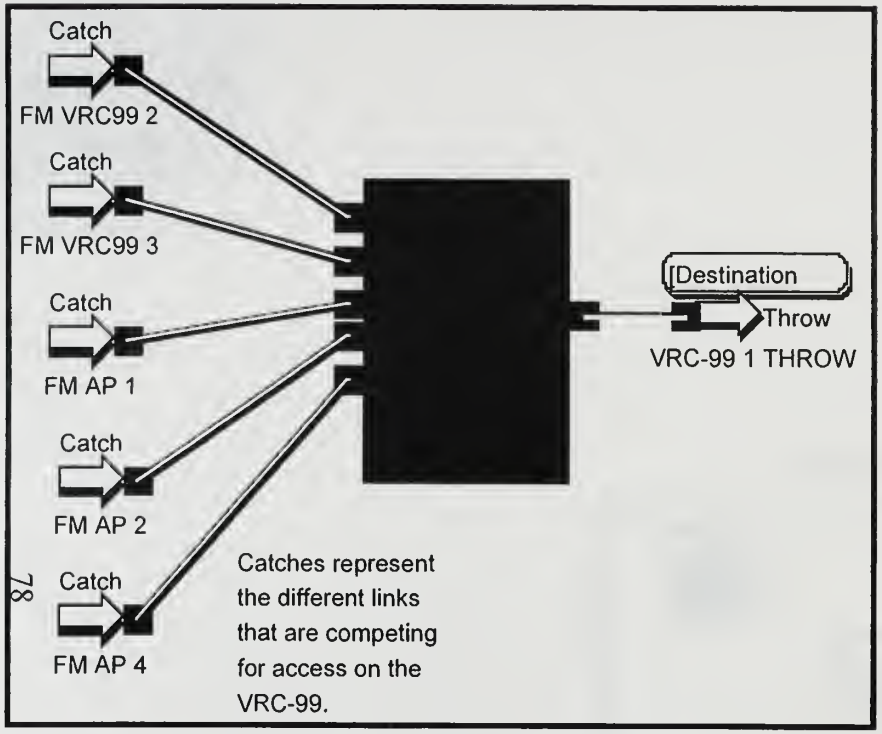
5 EUT Detector



Delays Message Traffic



Detailed Delay


Catch
FM VRC99 2
Catch
FM VRC99 3
Catch
FM AP 1
Catch
FM AP 2
Catch
FM AP 4
[Destination
Throw
VRC-99 1 THROW
Catches represent the different links that are competing for access on the VRC-99.

VRC-99A

Que(FIFO)
demand
Delay
TDMA CLOCK
start
Exit
Sets the demand for
the Service Activity
blocks by the value
given in Program
Block

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APPENDIX B. INITIAL MODEL ROUTING PLAN

This appendix contains the message routing information for the initial network model. Within the tables below the attribute value of the DESTINATION ACCESS POINT is used to make all routing decisions. The tables show the Access Points that the messages are leaving and the respective Catch block that the message is routed.

MESSAGE ROUTING THROUGH *INITIAL* ARCHITECTURE

Messages Leaving Access Point # 1

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1	INTERNAL
2	VRC-99 # 1
3	VRC-99 # 1
4	VRC-99 # 1
5	VRC-99 # 1
6	VRC-99 # 1
7	VRC-99 # 1

Messages Leaving Access Point # 2

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1	VRC-99 # 1
2	INTERNAL
3	AP3
4	VRC-99 # 3
5	VRC-99 # 3
6	VRC-99 # 2
7	VRC-99 # 2

Messages Leaving Access Point # 3

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1	VRC-99 # 1
2	AP2
3	INTERNAL
4	VRC-99 # 3
5	VRC-99 # 3
6	VRC-99 # 2
7	VRC-99 # 2

Messages Leaving Access Point # 4

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1	VRC-99 # 3
2	VRC-99 # 3
3	VRC-99 # 3
4	INTERNAL
5	AP5
6	VRC-99 # 3
7	VRC-99 # 3

Messages Leaving Access Point # 5

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1	AP4
2	AP4
3	AP4
4	AP4
5	INTERNAL
6	AP4
7	AP4

Messages Leaving Access Point # 6

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1	VRC-99 # 2
2	VRC-99 # 2
3	VRC-99 # 2
4	VRC-99 # 2
5	VRC-99 # 2
6	INTERNAL
7	AP7

Messages Leaving Access Point # 7

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1	AP6
2	AP6
3	AP6
4	AP6
5	AP6
6	AP6
7	INTERNAL

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APPENDIX C. FINAL MODEL ROUTING PLAN

This appendix contains the routing information pertaining to the final network model. The messages are routed in the same manner as those in the initial model contained in Appendix B.

MESSAGE ROUTING WITHIN ELB ARCHITECTURE

Note: The attribute value of the DESTINATION ACCESS POINT is used to make all routing decisions.

Messages Leaving Access Point # 1

VRC#	CATCH BLOCK
1	1

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1	INTERNAL
2-48	VRC 1

Messages Leaving Access Point # 2

VRC#	CATCH BLOCK
1	2
2	1
4	2

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1	VRC 1
2	INTERNAL
3	3
4-15	VRC 2
16-17	VRC 4
18-48	VRC 2

Messages Leaving Access Point # 3

VRC#	CATCH BLOCK
1	3
2	2
4	3

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1	VRC 1
2	AP2
3	INTERNAL
4-15	VRC 2
16-17	VRC 4
18-48	VRC 2

Messages Leaving Access Point # 4

VRC#	CATCH BLOCK
2	3
3	2
5	1
6	3
9	1
12	3
15	2

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-3	VRC 2
4	INTERNAL
5	AP5
6-11	VRC 15
11	VRC 15
12	AP12
13	AP13
14-15	VRC 3
16-17	VRC 2
18-21	VRC 5

22-30	VRC 6
31-39	VRC 9
40-48	VRC 12

Messages Leaving Access Point # 5

VRC#	CATCH BLOCK
2	4
3	3
5	2
6	4
9	2
12	4
15	3

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-3	VRC 2
4	AP4
5	INTERNAL
6-11	VRC 15
12	AP12

13	AP13
14-15	VRC 3
16-17	VRC 2
18-21	VRC 5
22-30	VRC 6
31-39	VRC 9
40-48	VRC 12

Messages Leaving Access Point # 6

VRC#	CATCH BLOCK
15	1

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-5	VRC 15
6	INTERNAL
7	AP7
8	AP8
9	AP9
10	AP10
11	AP11
12-48	VRC 15

Messages Leaving Access Point # 7

VRC#	CATCH BLOCK
15	2

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-5	VRC 15
6	AP6
7	INTERNAL
8	AP8
9	AP9
10	AP10
11	AP11
12-48	VRC 15

Messages Leaving Access Point # 8

VRC#	CATCH BLOCK
15	3

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1	VRC 15
6	AP6
7	AP7
8	INTERNAL
9	AP9
10	AP10
11	AP11
12-48	VRC 15

Messages Leaving Access Point # 9

VRC#	CATCH BLOCK
15	4

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-5	VRC 15
6	AP6
7	AP7
8	AP8
9	INTERNAL
10	AP10

11	AP11
12-48	VRC 15

Messages Leaving Access Point # 10

VRC#	CATCH BLOCK
15	5

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-5	VRC 15
6	AP6
7	AP7
8	AP8
9	AP9
10	INTERNAL
11	AP11
12-48	VRC 15

Messages Leaving Access Point # 11

VRC#	CATCH BLOCK
15	1

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-5	VRC 15
6	AP6
7	AP7
8	AP8
9	AP9
10	AP10
11	INTERNAL
12-48	VRC 15

Messages Leaving Access Point # 12

VRC#	CATCH BLOCK
2	5
3	3
5	2
6	1

9	3
12	5
15	4

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-3	VRC 2
4	AP4
5	AP5
6-11	VRC 15
12	INTERNAL
13	AP13
14-15	VRC 3
16-17	VRC 2
18-21	VRC 5
22-30	VRC 6
31-39	VRC 9
40-48	VRC 12

Messages Leaving Access Point # 13

VRC#	CATCH BLOCK
2	1

3	5
5	3
6	2
9	4
12	1
15	5

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-3	VRC 2
4	AP4
5	AP5
6-11	VRC 15
12	AP12
13	INTERNAL
14-15	VRC 3
16	VRC 2
17	VRC 2
18-21	VRC 5
22-30	VRC 6
31-39	VRC 9
40-48	VRC 12

Messages Leaving Access Point # 14

VRC#	CATCH BLOCK
3	1

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-13	VRC 3
14	INTERNAL
15	AP15
16-48	VRC 3

Messages Leaving Access Point # 15

VRC#	CATCH BLOCK
14	1

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-14	14
15	INTERNAL
16-48	14
43	14

Messages Leaving Access Point # 16

VRC#	CATCH BLOCK
4	1

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-15	VRC 4
15	VRC 4
16	INTERNAL
17	AP17
18-48	VRC 4

Messages Leaving Access Point # 17

VRC#	CATCH BLOCK
16	1

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-16	AP16
17	INTERNAL
18-48	AP16

Messages Leaving Access Point # 18

VRC#	CATCH BLOCK
5	1

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-17	VRC 5
18	INTERNAL
19	AP19
20	AP20
21	AP21
22-48	VRC 5

Messages Leaving Access Point # 19

VRC#	CATCH BLOCK
5	3

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-17	VRC 5
18	AP18

19	INTERNAL
20	AP20
21	AP21
22-48	VRC 5

Messages Leaving Access Point # 20

VRC#	CATCH BLOCK
5	4

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-17	VRC 5
18	AP18
19	AP19
20	INTERNAL
21	AP21
22-48	VRC 5

Messages Leaving Access Point # 21

VRC#	CATCH BLOCK
5	5

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-17	VRC 5
18	AP18
19	AP19
20	AP20
21	INTERNAL
22-48	VRC 5

Messages Leaving Access Point # 22

VRC#	CATCH BLOCK
6	1
7	2
8	2

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-21	VRC 6
22	INTERNAL
23	VRC 7
24	VRC 8
25	AP25
26	AP26
27	AP27
28	AP28
29	AP29
30	AP30
31-48	VRC 6

Messages Leaving Access Point # 23

VRC#	CATCH BLOCK
7	1

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-22	VRC 7
23	INTERNAL
24-48	VRC 7

Messages Leaving Access Point # 24

VRC#	CATCH BLOCK
8	1

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-23	VRC 8
24	INTERNAL
25-48	VRC 8

Messages Leaving Access Point # 25

VRC#	CATCH BLOCK
6	5
7	3
8	3

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-21	VRC 6
22	AP22
23	VRC 7

24	VRC 8
25	INTERNAL
26	AP26
27	AP27
28	AP28
29	AP29
30	AP30
31-48	VRC 6

Messages Leaving Access Point # 26

VRC#	CATCH BLOCK
6	1
7	4
8	4

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-21	VRC 6
22	AP22
23	VRC 7
24	VRC 8
25	AP25
26	INTERNAL

27	AP27
28	AP28
29	AP29
30	AP30
31-48	VRC 6

Messages Leaving Access Point # 27

VRC#	CATCH BLOCK
6	2
7	5
8	5

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-21	VRC 6
22	AP22
23	VRC 7
24	VRC 8
25	AP25
26	AP26
27	INTERNAL
28	AP28
29	AP29

30	AP30
31-48	VRC 6

Messages Leaving Access Point # 28

VRC#	CATCH BLOCK
6	3
7	1
8	1

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-21	VRC 6
22	AP22
23	VRC 7
24	VRC 8
25	AP25
26	AP26
27	AP27
28	INTERNAL
29	AP29
30	AP30
31-48	VRC 6

Messages Leaving Access Point # 29

VRC#	CATCH BLOCK
6	4
7	2
8	2

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-21	VRC 6
22	AP22
23	VRC 7
24	VRC 8
25	AP25
26	AP26
27	AP27
28	AP28
29	INTERNAL
30	AP30
31-48	VRC 6

Messages Leaving Access Point # 30

VRC#	CATCH BLOCK
6	5
7	3
8	3

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-21	VRC 6
22	AP22
23	VRC 7
24	VRC 8
25	AP25
26	AP26
27	AP27
28	AP28
29	AP29
30	INTERNAL
31-48	VRC 6

Messages Leaving Access Point # 31

VRC#	CATCH BLOCK
9	5
10	2
11	2

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-30	VRC 9
31	INTERNAL
32	VRC 10
33	VRC 11
34	AP34
35	AP35
36	AP36
37	AP37
38	AP38
39	AP39
40-48	VRC 9

Messages Leaving Access Point # 32

VRC#	CATCH BLOCK
10	1

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-31	VRC 10
32	INTERNAL
33-48	VRC 10

Messages Leaving Access Point # 33

VRC#	CATCH BLOCK
11	1

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-32	VRC 11
33	INTERNAL
34-48	VRC 11

Messages Leaving Access Point # 34

VRC#	CATCH BLOCK
9	1
10	3
11	3

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-30	VRC 9
31	AP31
32	VRC 10
33	VRC 11
34	INTERNAL
35	AP35
36	AP36
37	AP37
38	AP38
39	AP39
40-48	VRC 9

Messages Leaving Access Point # 35

VRC#	CATCH BLOCK
9	2
10	4
11	4

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-30	VRC 9
31	AP31
32	VRC 10
33	VRC 11
34	AP34
35	INTERNAL
36	AP36
37	AP37
38	AP38
39	AP39
40-48	VRC 9

Messages Leaving Access Point # 36

VRC#	CATCH BLOCK
9	3
10	5
11	5

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-30	VRC 9
31	AP31
32	VRC 10
33	VRC 11
34	AP34
35	AP35
36	INTERNAL
37	AP37
38	AP38
39	AP39
40-48	VRC 9

Messages Leaving Access Point # 37

VRC#	CATCH BLOCK
9	4
10	1
11	1

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-30	VRC 9
31	AP31
32	VRC 10
33	VRC 11
34	AP34
35	AP35
36	AP36
37	INTERNAL
38	AP38
39	AP39
40-48	VRC 9

Messages Leaving Access Point # 38

VRC#	CATCH BLOCK
9	5
10	2
11	2

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-30	VRC 9
31	AP31
32	VRC 10
33	VRC 11
34	AP34
35	AP35
36	AP36
37	AP37
38	INTERNAL
39	AP39
40-48	VRC 9

Messages Leaving Access Point # 39

VRC#	CATCH BLOCK
9	1
10	3
11	3

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-30	VRC 9
31	AP31
32	VRC 10
33	VRC 11
34	AP34
35	AP35
36	AP36
37	AP37
38	AP38
39	INTERNAL
40-48	VRC 9

Messages Leaving Access Point # 40

VRC#	CATCH BLOCK
12	1
13	3
14	1

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-39	VRC 12
40	INTERNAL
41	VRC 14
42	VRC 13
43	AP43
44	AP44
45	AP45
46	AP46
47	AP47
48	AP48

Messages Leaving Access Point # 41

VRC#	CATCH BLOCK
14	2

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-40	VRC 14
41	INTERNAL
42-48	VRC 14

Messages Leaving Access Point # 42

VRC#	CATCH BLOCK
13	1

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-41	VRC 13
42	INTERNAL
43-48	VRC 13

Messages Leaving Access Point # 43

VRC#	CATCH BLOCK
12	2
13	2
14	3

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-39	VRC 12
40	AP40
41	VRC 14
42	VRC 13
43	INTERNAL
44	AP44
45	AP45
46	AP46
47	AP47
48	AP48

Messages Leaving Access Point # 44

VRC#	CATCH BLOCK
12	3
13	3
14	4

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-39	VRC 12
40	AP40
41	VRC 14
42	VRC 13
43	AP43
44	INTERNAL
45	AP45
46	AP46
47	AP47
48	AP48

Messages Leaving Access Point # 45

VRC#	CATCH BLOCK
12	4
13	4
14	5

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-39	VRC 12
40	AP40
41	VRC 14
42	VRC 13
43	AP43
44	AP44
45	INTERNAL
46	AP46
47	AP47
48	AP48

Messages Leaving Access Point # 46

VRC#	CATCH BLOCK
12	5
13	5
14	1

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-39	VRC 12
40	AP40
41	VRC 14
42	VRC 13
43	AP43
44	AP44
45	AP45
46	INTERNAL
47	AP47
48	AP48

Messages Leaving Access Point # 47

VRC#	CATCH BLOCK
12	1
13	1
14	2

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-39	VRC 12
40	AP40
41	VRC 14
42	VRC 13
43	AP43
44	AP44
45	AP45
46	AP46
47	INTERNAL
48	AP48

Messages Leaving Access Point # 48

VRC#	CATCH BLOCK
12	2
13	2
14	3

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-39	VRC 12
40	AP40
41	VRC 14
42	VRC 13
43	AP43
44	AP44
45	AP45
46	AP46
47	AP47
48	INTERNAL

Messages Leaving VRC-99 # 1

VRC #	CATCH BLOCK
2	2
4	4

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1	AP1
2	AP2
3	AP3
4-15	VRC 2
16-17	VRC 4
18-48	VRC 2

Messages Leaving VRC-99 # 2

VRC #	CATCH BLOCK
1	1
3	3
4	5
5	2

6	4
9	4
12	2
15	1

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1	VRC 1
2	AP2
3	AP3
4	AP4
5	AP5
6-11	VRC 15
12	AP12
13	AP13
14-15	VRC 3
16-17	VRC 4
18-21	VRC 5
22	VRC 6
23-30	VRC 6
31-39	VRC 9
40-48	VRC 12

Messages Leaving VRC-99 # 3

VRC #	CATCH BLOCK
2	4
5	3
6	2
9	2
12	3
15	2

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-3	VRC 2
4	AP4
5	AP5
6-11	VRC 15
12	AP12
13	AP13
14	AP14
15	AP14
16-17	VRC 2
18-21	VRC 5
22-30	VRC 6
31-39	VRC 9

40-48	VRC 12

Messages Leaving VRC-99 # 4

VRC #	CATCH BLOCK
1	4
2	3

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1	VRC 1
2	AP2
3	AP3
4-15	VRC 2
16	AP16
17	AP16
18-48	VRC 2

Messages Leaving VRC-99 # 5

VRC #	CATCH BLOCK
2	5
3	3
6	5
9	2
12	5
15	3

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-3	VRC 2
4	AP4
5	AP5
6-11	VRC 15
12	AP12
13	AP13
14-15	VRC 3
16-17	VRC 2
18	AP18
19	AP19
20	AP20
21	AP21

22-30	VRC 6
31-39	VRC 9
40-48	VRC 12

Messages Leaving VRC-99 # 6

VRC #	CATCH BLOCK
2	1
3	4
5	2
7	5
8	5
9	3
12	1
15	4

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-3	VRC 2
4	AP4
5	AP5
6-11	VRC 15
12	AP12

13	AP13
14-15	VRC 3
16-17	VRC 2
18-21	VRC 5
22	AP22
23	VRC 7
24	VRC 8
25	AP25
26	AP26
27	AP27
28	AP28
29	AP29
30	AP30
31-39	VRC 9
40-48	VRC 12

Messages Leaving VRC-99 # 7

VRC #	CATCH BLOCK
6	1
8	4

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-21	VRC 6
22	AP22
23	AP23
24	VRC 8
25	AP25
26	AP26
27	AP27
28	AP28
29	AP29
30	AP30
31-48	VRC 6

Messages Leaving VRC-99 # 8

VRC #	CATCH BLOCK
6	2
7	4

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-21	VRC 6
22	AP22

23	VRC 7
24	AP24
25	AP25
26	AP26
27	AP27
28	AP28
29	AP29
30	AP30
31-48	VRC 6

Messages Leaving VRC-99 # 9

VRC #	CATCH BLOCK
2	2
3	5
5	3
6	3
10	4
11	4
12	2
15	5

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-3	VRC 2
4	AP4
5	AP5
6-11	VRC 15
12	AP12
13	AP13
14-15	VRC 3
16-17	VRC 2
18-21	VRC 5
22-30	VRC 6
31	31
32	VRC 10
33	VRC 11
34	AP34
35	AP35
36	AP36
37	AP37
38	AP38
39	AP39
40-48	VRC 12

Messages Leaving VRC-99 # 10

VRC #	CATCH BLOCK
9	5
11	5

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-30	VRC 9
31	AP31
32	AP32
33	VRC 11
34	AP34
35	AP35
36	AP36
37	AP37
38	AP38
39	AP39
40-48	VRC 9

Messages Leaving VRC-99 # 11

VRC #	CATCH BLOCK

9	1
10	5

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-30	VRC 9
31	AP31
32	VRC 10
33	AP33
34	AP34
35	AP35
36	AP36
37	AP37
38	AP38
39	AP39
40-48	VRC 9

Messages Leaving VRC-99 # 12

VRC #	CATCH BLOCK
3	1
5	4
6	4

9	4
13	4
14	4
15	1
2	4

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-3	VRC 2
4	AP4
5	AP5
6-11	VRC 15
12	AP12
13	AP13
14-15	VRC 3
16-17	VRC 2
18-21	VRC 5
22-30	VRC 6
31-39	VRC 9
40	40
41	VRC 14
42	VRC 13
43	AP43
44	AP44

45	AP45
46	AP46
47	AP47
48	AP48

Messages Leaving VRC-99 # 13

VRC #	CATCH BLOCK
12	3
14	5

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-39	VRC 12
40	AP40
41	VRC 14
42	AP42
43	AP43
44	AP44
45	AP45
46	AP46
47	AP47
48	AP48

Messages Leaving VRC-99 # 14

VRC #	CATCH BLOCK
12	4
13	5

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-39	VRC 12
40	AP40
41	AP41
42	VRC 13
43	AP43
44	AP44
45	AP45
46	AP46
47	AP47
48	AP48

VRC #	CATCH BLOCK
2	3
3	1
5	1
6	3
9	3
12	4

Attribute Value (Destination Access Point)	Catch (Next Access Point in Route)
1-3	VRC 2
4	AP4
5	AP5
6	AP6
7	AP7
8	AP8
9	AP9
10	AP10
11	AP11
12	AP12
13	AP13
14-15	VRC 3
16-17	VRC 2
18-21	VRC 5

22-30	VRC 6
31-39	VRC 9
40-48	VRC 12

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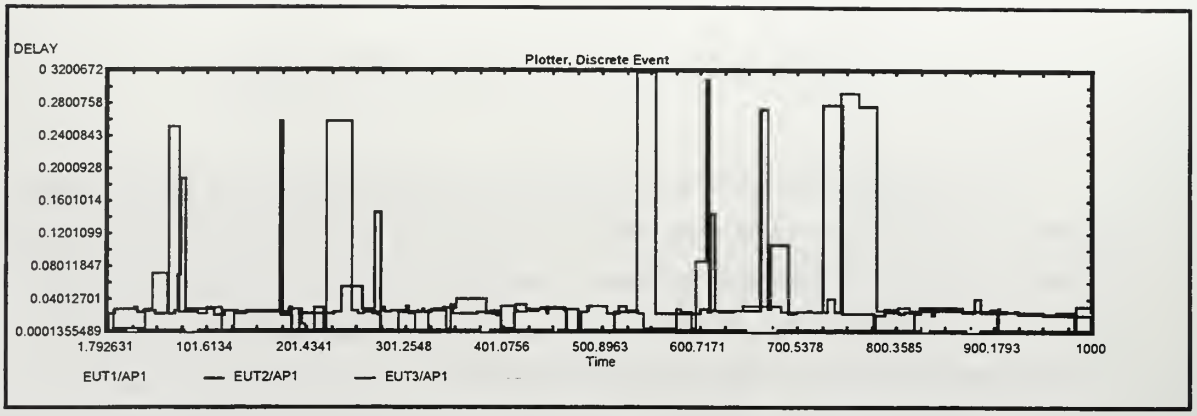
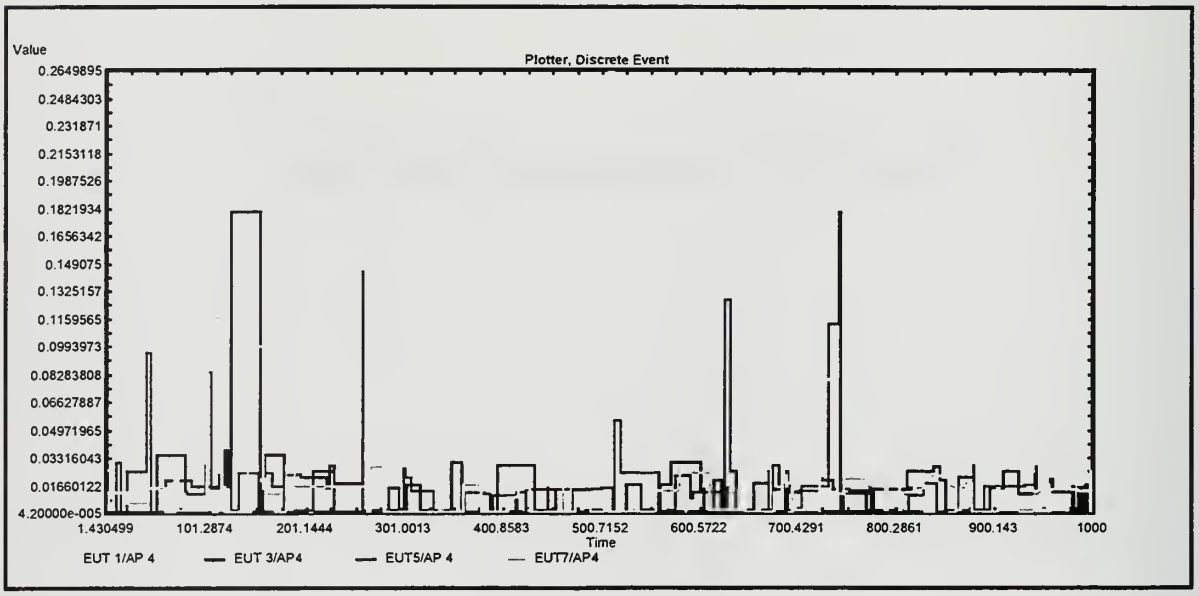
APPENDIX D. FINAL MODEL TEST DATA

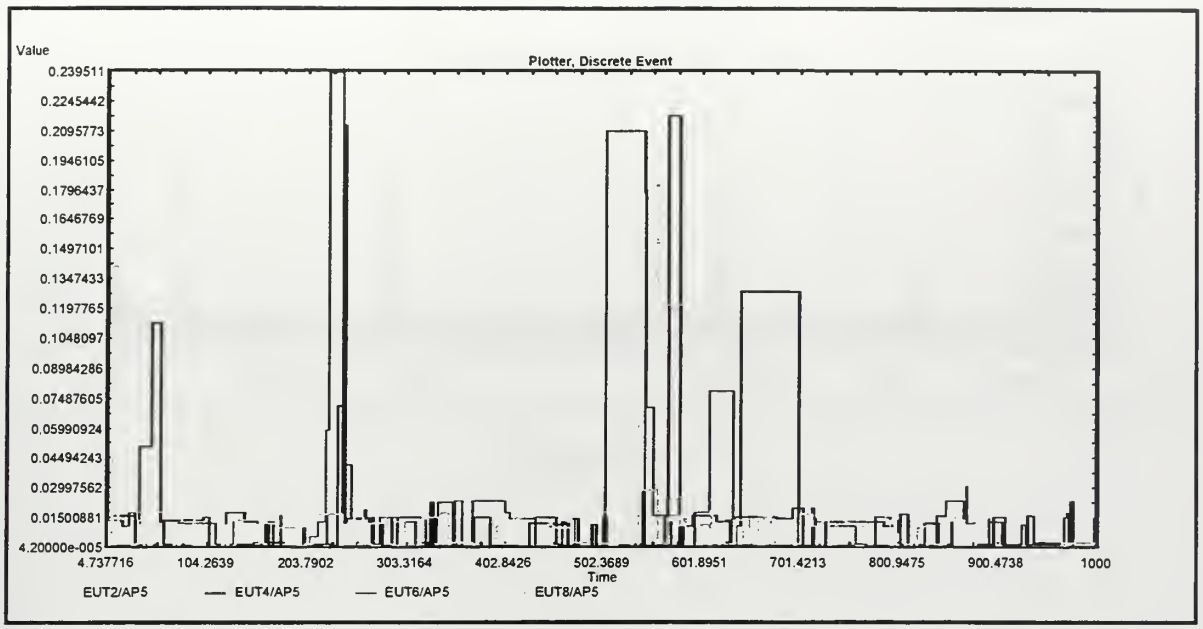
This appendix contains the final model test statistical data. The Access Points chosen for the collection of data are depicted graphically with the use of a Plotter graph inherent to the Extend modeling software. The graph displays the delay experienced within each of the tested Access Points over the period of the model. Also contained within this appendix is the statistical data collected from the Access Points in table format. The data shows the respective Access Points, the message's Origin Access Point, the arrival time of the message and the delay associated with the message.



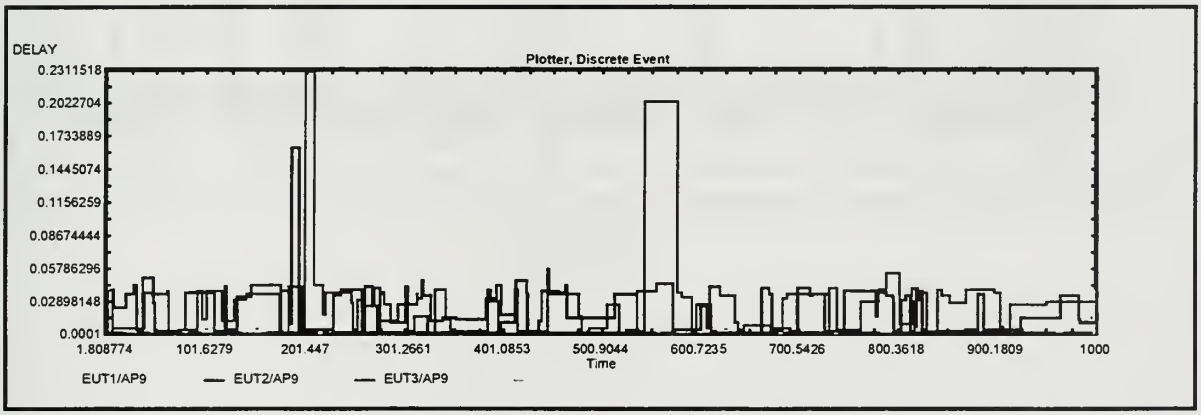
Run 0 AP1



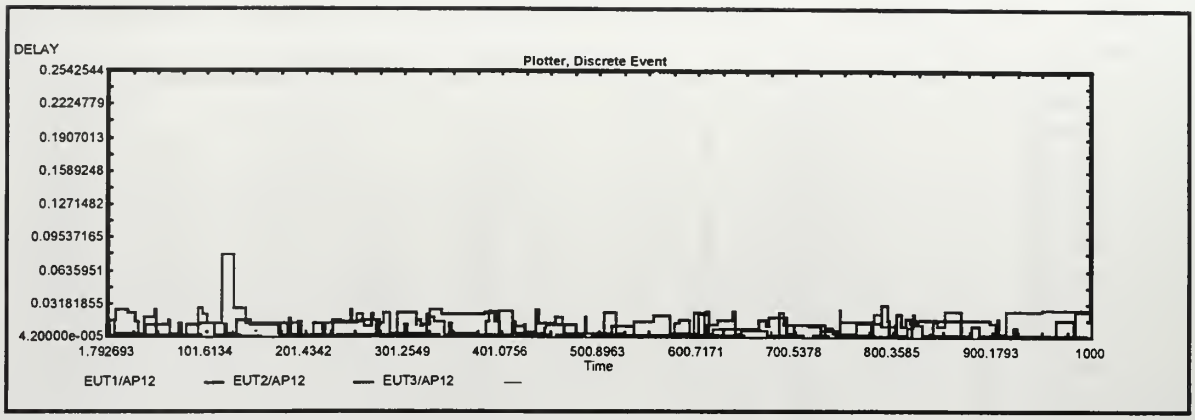
Run 0 AP 4



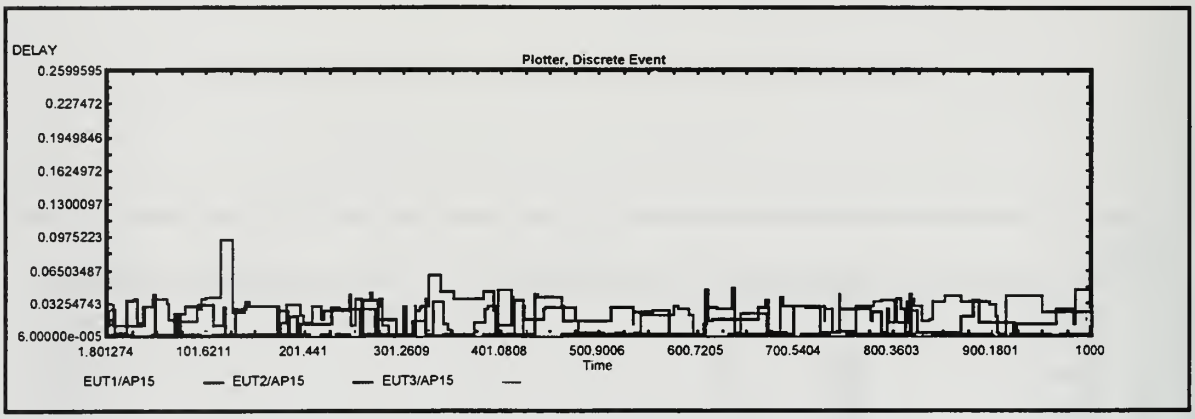
Run 0 AP 5



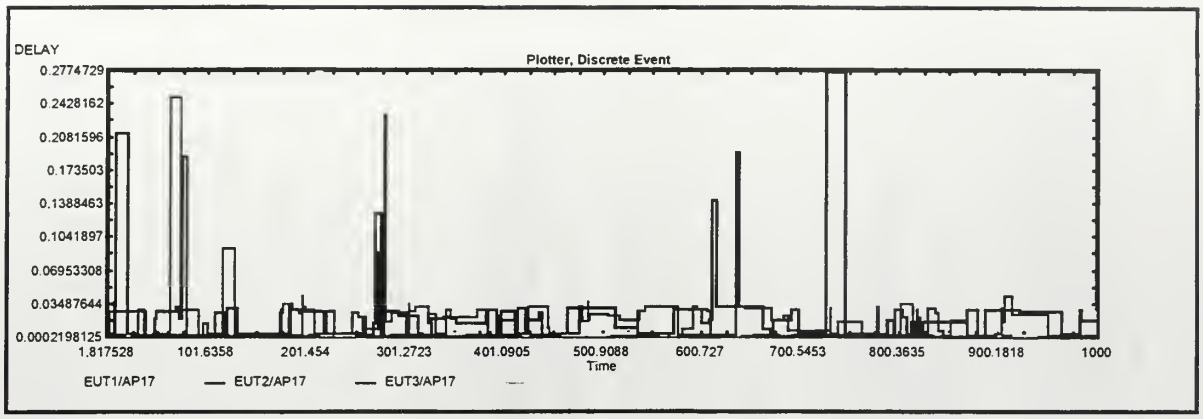
Run 0 AP 9



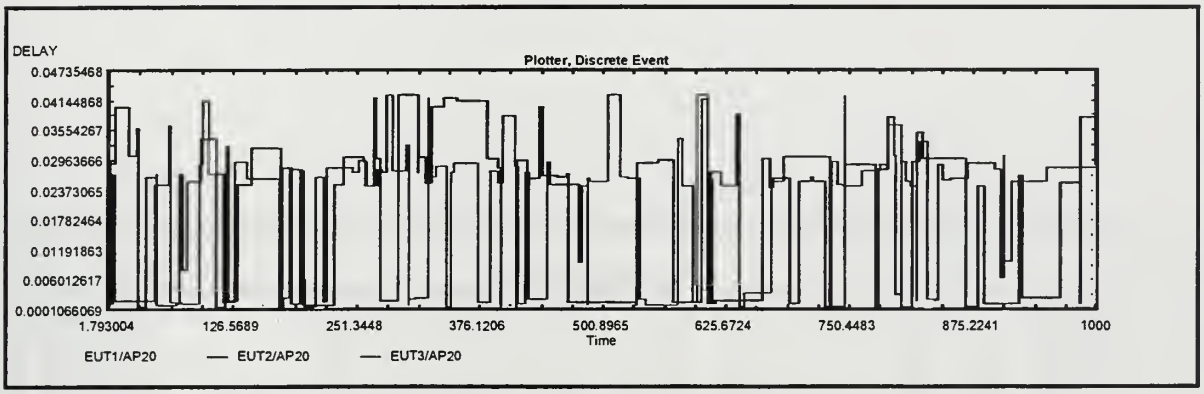
Run 0 AP 12



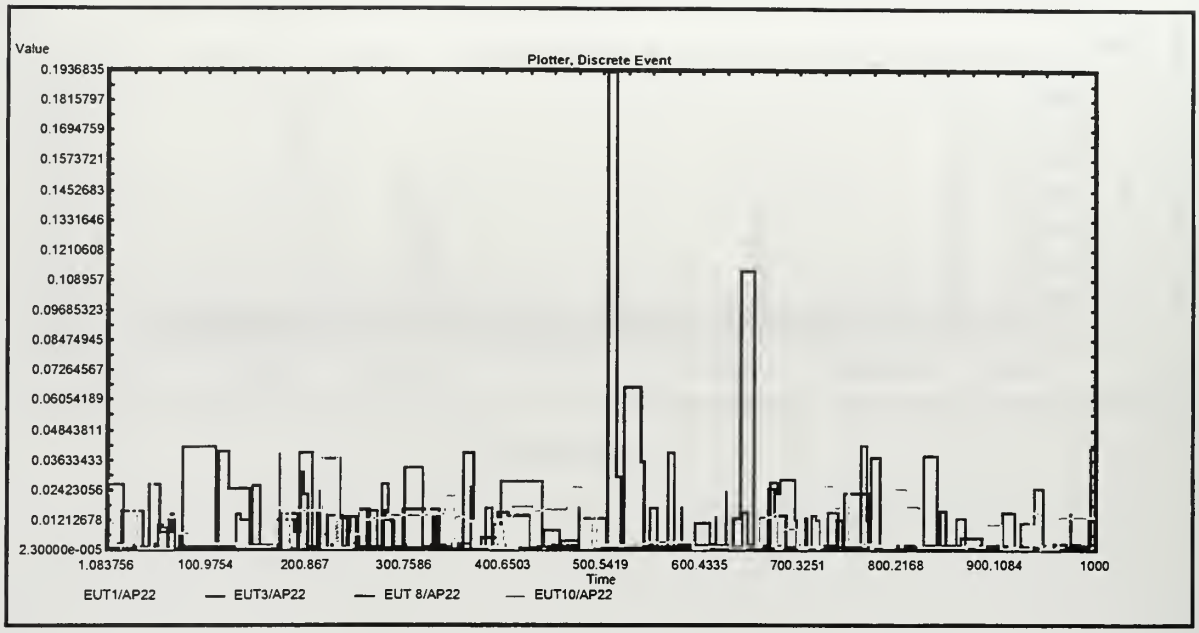
Run 0 AP 15



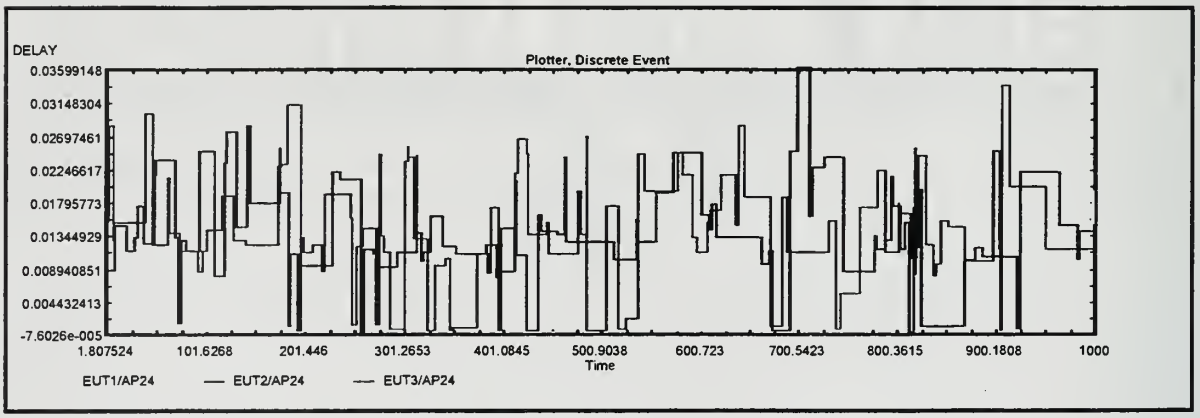
Run 0 AP 17



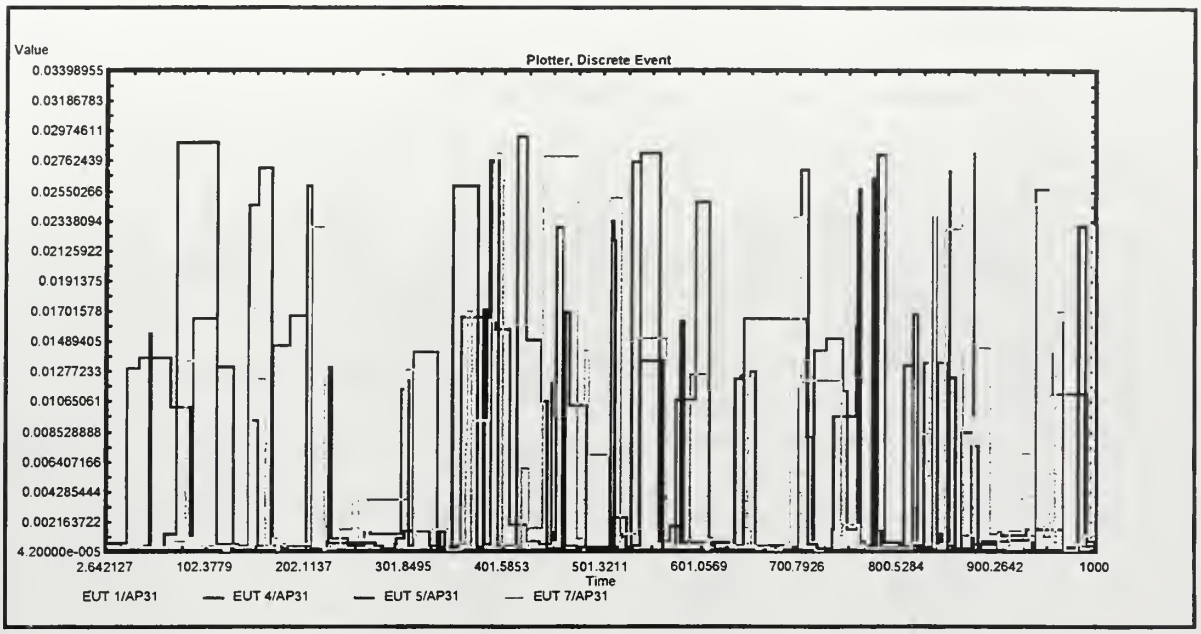
Run 0 AP 20



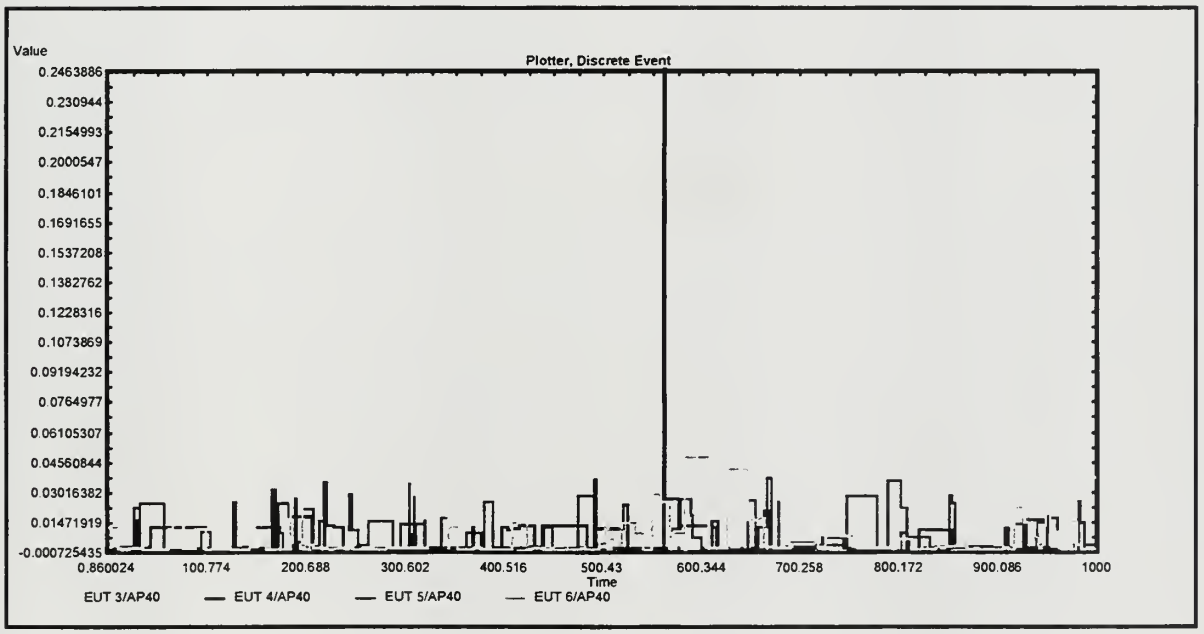
Run 0 AP22



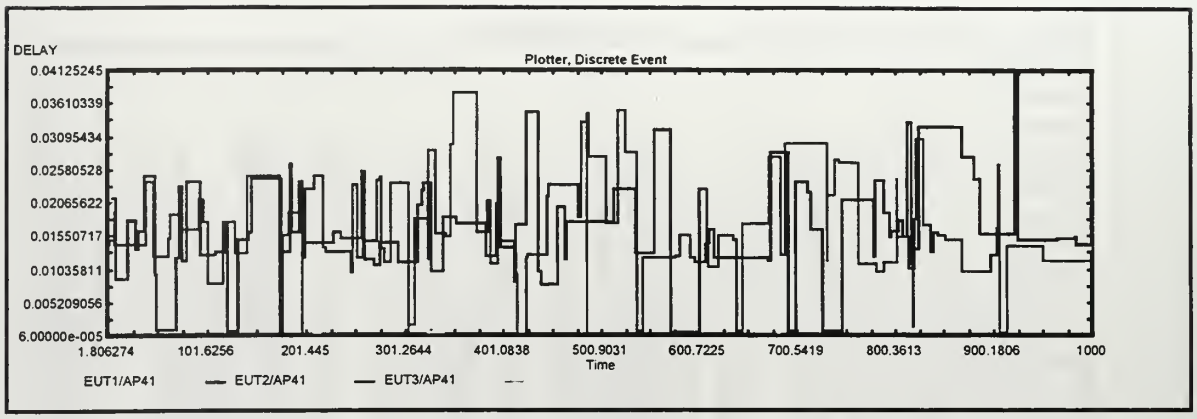
Run 0 AP 24



Run 0 AP31



Run 0 AP40


DELAY
Plotter, Discrete Event
0.04125245
0.03610339
0.03095434
0.02580528
0.02065622
0.01550717
0.01035811
0.005209056
6.00000e-005
1.806274
101.6256
201.445
301.2644
401.0838
500.9031
600.7225
700.5419
800.3613
900.1806
1000
Time
EUT1/AP41
EUT2/AP41
EUT3/AP41

Run 0 AP 41

Extend Dialog Report - 5/6/00 11:07:41 PM
Run #0
INFORMATION RUN 0 VTC W/AP 1 AT 500 SEC. 2 MB

Information **block number 629**

Input Parameters:

Arrival Time	time differe	COMMTYPE	OriginAP
914.86877	0.022554318	5.0000000	4.0000000
951.14377	0.018963601	4.0000000	5.0000000

Information **block number 969**

Input Parameters:

Arrival Time	time differe	COMMTYPE	OriginAP
945.74377	0.024629545	4.0000000	5.0000000
949.96877	0.020570234	4.0000000	5.0000000
962.31877	0.02000621	4.0000000	4.0000000
966.38752	0.019698726	4.0000000	5.0000000
978.18752	0.0194543	4.0000000	5.0000000
999.10627	0.019876336	4.0000000	4.0000000

Information **block number 4915**

Input Parameters:

Arrival Time	time differe	COMMTYPE	OriginAP
1.7930044	0.00076652821	5.0000000	19.000000
2.5462740	0.029112199	4.0000000	36.000000
3.0113645	0.00096727866	6.0000000	19.000000
8.6900240	0.026537747	4.0000000	37.000000
8.8824717	0.005127996	8.0000000	19.000000
9.7250660	0.0014634259	6.0000000	19.000000
49.033774	0.024583597	4.0000000	38.000000
63.452524	0.036170082	7.0000000	36.000000
65.145091	0.0012006599	5.0000000	19.000000
75.903429	0.00087666261	7.0000000	20.000000
93.558774	0.028380377	7.0000000	37.000000
97.902524	0.041177229	4.0000000	33.000000
102.85877	0.026612496	8.0000000	39.000000
118.30243	0.001160254	6.0000000	19.000000
129.89002	0.028894599	4.0000000	35.000000
141.82752	0.025820401	4.0000000	37.000000
175.01887	0.00037511693	4.0000000	21.000000
178.58680	0.0022183235	5.0000000	20.000000
185.01502	0.027471016	5.0000000	36.000000
197.78146	0.0057662357	5.0000000	19.000000
201.15299	0.00037219126	4.0000000	19.000000
210.64627	0.025842666	4.0000000	38.000000
219.61280	0.001207984	5.0000000	18.000000
222.16502	0.027762465	5.0000000	36.000000
248.74002	0.026957875	4.0000000	34.000000
249.50252	0.026936567	4.0000000	31.000000
254.59002	0.029439322	4.0000000	34.000000
259.96502	0.024319174	4.0000000	35.000000
273.32752	0.027633776	4.0000000	31.000000
276.84627	0.026910534	5.0000000	36.000000
281.70252	0.042375658	4.0000000	32.000000
287.61502	0.027073478	4.0000000	31.000000
302.87752	0.032249845	5.0000000	36.000000
305.29781	0.00063941708	4.0000000	21.000000
305.67543	0.001947422	5.0000000	21.000000
311.24043	0.0021049477	4.0000000	18.000000
325.20252	0.041518689	7.0000000	33.000000
325.97752	0.026010643	4.0000000	31.000000
332.87752	0.0280149	7.0000000	39.000000
343.60408	0.00048281561	4.0000000	18.000000
348.37127	0.026952503	8.0000000	31.000000
350.70877	0.028710927	4.0000000	31.000000
375.64171	0.0012791225	4.0000000	19.000000
388.36502	0.0270795	4.0000000	34.000000
395.95252	0.024868759	5.0000000	31.000000
400.12752	0.038121767	7.0000000	33.000000
412.47127	0.027975533	4.0000000	39.000000
416.62211	0.00097737105	4.0000000	21.000000
424.55252	0.026934402	7.0000000	36.000000
427.51478	0.002043588	5.0000000	20.000000

445.82752	0.028898131	5.0000000	37.000000
448.65252	0.024534562	4.0000000	38.000000
477.67225	0.0091834523	5.0000000	19.000000
481.50877	0.024281504	5.0000000	31.000000
486.57776	0.00078505631	5.0000000	21.000000
486.93377	0.025651669	4.0000000	31.000000
488.23377	0.02506919	5.0000000	31.000000
506.85877	0.042251855	7.0000000	32.000000
519.65877	0.026089293	4.0000000	31.000000
526.66502	0.025776601	4.0000000	31.000000
538.64392	0.0020432086	4.0000000	21.000000
545.17643	0.00081072625	5.0000000	18.000000
577.39627	0.033450513	5.0000000	36.000000
582.89627	0.024163309	4.0000000	36.000000
593.66434	0.0012251977	4.0000000	19.000000
598.34627	0.042377186	4.0000000	33.000000
608.08704	0.00090999976	5.0000000	19.000000
611.45877	0.026824734	4.0000000	35.000000
622.54627	0.024100775	4.0000000	36.000000
637.22752	0.038371632	4.0000000	33.000000
640.60716	0.00038566137	4.0000000	21.000000
646.10471	0.0032130835	8.0000000	19.000000
672.89627	0.025161811	5.0000000	31.000000
686.17127	0.029802041	4.0000000	34.000000
731.94515	0.00017361982	4.0000000	19.000000
732.74002	0.029111512	4.0000000	38.000000
739.60877	0.024530283	4.0000000	31.000000
745.07127	0.024117452	5.0000000	31.000000
764.04002	0.027237971	7.0000000	34.000000
782.57752	0.028490937	7.0000000	39.000000
789.80252	0.036162526	4.0000000	38.000000
803.82127	0.031573897	5.0000000	37.000000
803.96677	0.00054242166	4.0000000	20.000000
815.55877	0.029022014	5.0000000	39.000000
821.68377	0.029080841	6.0000000	34.000000
822.44002	0.03293616	5.0000000	36.000000
830.89743	0.0019019936	5.0000000	19.000000
838.50137	0.0016901623	7.0000000	20.000000
841.66502	0.028276844	5.0000000	39.000000
845.82752	0.025419386	4.0000000	35.000000
853.95252	0.025797258	4.0000000	34.000000
870.31502	0.028644964	4.0000000	39.000000
898.20877	0.02740592	4.0000000	36.000000
904.50200	0.006027715	5.0000000	19.000000
906.93377	0.03027945	5.0000000	31.000000
908.04831	0.0095579634	4.0000000	21.000000
914.87127	0.025054318	6.0000000	34.000000
951.15252	0.027713601	5.0000000	34.000000

Information **block number 7542**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
2.5462740		0.025481492	5.0000000	17.000000
5.5375240		0.011643057	4.0000000	40.000000
23.040678		0.0053402101	8.0000000	5.0000000
42.075024		0.01424335	6.0000000	40.000000
61.682163		0.00033898631	4.0000000	5.0000000
71.468774		0.022060904	4.0000000	18.000000
74.855329	1.0000000	0.00068660676	5.0000000	4.0000000
102.37836	1.0000000	0.11508533	7.0000000	5.0000000
118.59377	1.0000000	0.015000464	4.0000000	40.000000
122.03803	1.0000000	0.00023649927	6.0000000	5.0000000
139.86252	1.0000000	0.011968248	5.0000000	14.000000
144.38377	1.0000000	0.090911308	4.0000000	17.000000
149.37803	1.0000000	0.098498786	5.0000000	5.0000000
159.81252	1.0000000	0.014348332	4.0000000	22.000000
162.38752	1.0000000	0.010411444	7.0000000	40.000000
171.77409	1.0000000	0.00023982005	4.0000000	5.0000000
173.23752	1.0000000	0.011213841	5.0000000	22.000000
175.76175	1.0000000	0.00027689105	4.0000000	5.0000000
181.33127	1.0000000	0.02169872	4.0000000	18.000000
181.40252	1.0000000	0.027885255	6.0000000	16.000000

183.83127	1.0000000	0.023413678	6.0000000	18.000000
191.73127	1.0000000	0.015363793	4.0000000	14.000000
238.39377	1.0000000	0.015462438	5.0000000	22.000000
263.82775	1.0000000	4.2000000e-005	5.0000000	5.0000000
267.64627	1.0000000	0.027096674	7.0000000	17.000000
280.44115	1.0000000	0.00015803645	4.0000000	4.0000000
327.75911	1.0000000	0.00012422465	4.0000000	5.0000000
337.20045	1.0000000	0.00065948045	7.0000000	4.0000000
339.49184	1.0000000	0.00019959397	4.0000000	4.0000000
361.11877	1.0000000	0.015711553	4.0000000	40.000000
378.76043	1.0000000	0.00046946242	4.0000000	4.0000000
406.52007	1.0000000	0.0089149123	8.0000000	5.0000000
417.24377	1.0000000	0.014585741	4.0000000	14.000000
422.68127	1.0000000	0.013918852	4.0000000	40.000000
429.79347	1.0000000	0.00031748525	4.0000000	5.0000000
463.16252	1.0000000	0.023155298	6.0000000	18.000000
469.96427	1.0000000	4.2000000e-005	4.0000000	5.0000000
474.51877	1.0000000	0.011294455	4.0000000	22.000000
489.49670	1.0000000	8.9125380e-005	4.0000000	4.0000000
503.08087	1.0000000	0.0003372739	4.0000000	5.0000000
533.47448	1.0000000	0.0007353631	5.0000000	12.000000
537.04489	1.0000000	0.00042985505	4.0000000	5.0000000
557.47502	1.0000000	0.01263018	5.0000000	22.000000
581.62752	1.0000000	0.023226022	5.0000000	17.000000
611.99184	1.0000000	0.0010365494	5.0000000	4.0000000
648.45060	1.0000000	0.00037576243	4.0000000	5.0000000
660.10002	1.0000000	0.011798163	4.0000000	40.000000
660.23127	1.0000000	0.011810593	7.0000000	40.000000
662.78496	1.0000000	0.0002684102	4.0000000	4.0000000
677.89377	1.0000000	0.01130587	4.0000000	14.000000
686.37166	1.0000000	0.021758707	4.0000000	5.0000000
690.06877	1.0000000	0.014854024	5.0000000	22.000000
691.01127	1.0000000	0.016839859	5.0000000	31.000000
697.17879	1.0000000	0.00086808074	5.0000000	13.000000
723.17473	1.0000000	0.0003864331	4.0000000	12.000000
724.37128	1.0000000	0.22111306	4.0000000	5.0000000
726.10877	1.0000000	0.021551462	4.0000000	16.000000
727.37147	1.0000000	0.079059615	7.0000000	5.0000000
742.46877	1.0000000	0.010712824	4.0000000	22.000000
747.37179	1.0000000	0.01929537	6.0000000	4.0000000
770.34002	1.0000000	0.018979099	4.0000000	16.000000
775.99252	1.0000000	0.015964299	5.0000000	31.000000
788.73188	1.0000000	0.00096104503	6.0000000	12.000000
792.74627	1.0000000	0.022651493	4.0000000	17.000000
803.86962	1.0000000	0.0010994836	5.0000000	5.0000000
805.57502	1.0000000	0.011346304	7.0000000	40.000000
822.51752	1.0000000	0.014726409	4.0000000	31.000000
828.26877	1.0000000	0.021441838	4.0000000	18.000000
854.74377	1.0000000	0.01552071	5.0000000	22.000000
860.30369	1.0000000	0.0074709526	8.0000000	4.0000000
861.82842	1.0000000	0.0010978861	5.0000000	4.0000000
866.46252	1.0000000	0.014514604	4.0000000	22.000000
870.50002	1.0000000	0.017443551	8.0000000	40.000000
879.15130	1.0000000	0.00045473345	4.0000000	13.000000
905.11252	1.0000000	0.014034499	6.0000000	14.000000
905.81169	1.0000000	0.00078457789	7.0000000	12.000000
930.76443	1.0000000	0.00090784272	5.0000000	5.0000000
930.79365	1.0000000	0.0009574995	5.0000000	5.0000000
937.41360	1.0000000	0.00062359703	7.0000000	13.000000
941.97502	1.0000000	0.012920645	5.0000000	14.000000
944.40297	1.0000000	4.2000000e-005	5.0000000	5.0000000
946.42502	1.0000000	0.012017518	7.0000000	40.000000
946.94574	1.0000000	0.00028790078	4.0000000	5.0000000
953.86127	1.0000000	0.016594969	5.0000000	31.000000
956.19139	1.0000000	0.00021185674	4.0000000	13.000000
957.54877	1.0000000	0.013660013	5.0000000	31.000000
984.69377	1.0000000	0.012829534	5.0000000	14.000000
998.71502	1.0000000	0.024503752	4.0000000	16.000000
998.74377	1.0000000	0.011326364	5.0000000	40.000000
999.14366	1.0000000	6.0000000e-005	5.0000000	5.0000000

Information **block number 9086**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
1.4892383	1.0000000	0.00098237284	5.0000000	4.0000000
1.5937740	1.0000000	0.011291542	7.0000000	22.000000
22.127142	1.0000000	0.00023645232	4.0000000	12.000000
26.952524	1.0000000	0.023460381	5.0000000	17.000000
47.970085	1.0000000	0.00024909701	4.0000000	13.000000
48.552524	1.0000000	0.023089162	4.0000000	17.000000
65.877524	1.0000000	0.019200119	5.0000000	17.000000
66.100024	1.0000000	0.013030641	5.0000000	22.000000
66.108774	1.0000000	0.019932424	5.0000000	17.000000
76.412524	1.0000000	0.019245295	8.0000000	14.000000
82.498774	1.0000000	0.015222989	7.0000000	31.000000
85.022316	1.0000000	0.0010405137	7.0000000	12.000000
95.215024	1.0000000	0.019041442	4.0000000	16.000000
108.88725	1.0000000	4.2000000e-005	4.0000000	5.0000000
114.37757	1.0000000	0.018598008	4.0000000	12.000000
114.77134	1.0000000	0.0010248277	5.0000000	4.0000000
126.71252	1.0000000	0.015627921	5.0000000	22.000000
132.14118	1.0000000	0.0001713062	4.0000000	5.0000000
146.99627	1.0000000	0.024976426	4.0000000	17.00000
165.09002	1.0000000	0.025654638	5.0000000	17.000000
188.23127	1.0000000	0.012941127	4.0000000	22.000000
206.98046	1.0000000	0.00021179984	5.0000000	4.0000000
208.05877	1.0000000	0.019504536	4.0000000	17.000000
236.17502	1.0000000	0.015587482	5.0000000	22.000000
236.78127	1.0000000	0.020530611	4.0000000	18.000000
245.74877	1.0000000	0.016297974	4.0000000	31.000000
252.55002	1.0000000	0.016260216	5.0000000	22.000000
252.88377	1.0000000	0.020191054	5.0000000	16.000000
269.84252	1.0000000	0.017367021	5.0000000	31.000000
276.50627	1.0000000	0.016200176	4.0000000	40.000000
281.28127	1.0000000	0.02853287	8.0000000	22.000000
291.39784	1.0000000	0.00020280097	4.0000000	13.000000
292.63752	1.0000000	0.028728243	8.0000000	40.000000
302.79811	1.0000000	0.00035139843	4.0000000	13.000000
303.23155	1.0000000	0.00074316036	5.0000000	5.0000000
318.63577	1.0000000	4.2000000e-005	5.0000000	5.0000000
366.59587	1.0000000	0.00024802823	4.0000000	5.0000000
369.69633	1.0000000	0.0066913898	8.0000000	5.0000000
396.96877	1.0000000	0.015156538	4.0000000	22.000000
423.28416	1.0000000	0.00080507659	6.0000000	5.0000000
440.98531	1.0000000	0.0003057773	5.0000000	5.0000000
448.54082	1.0000000	0.0011063689	7.0000000	5.0000000
454.60877	1.0000000	0.026490572	5.0000000	16.000000
465.74886	1.0000000	0.00028363929	4.0000000	5.0000000
467.43847	1.0000000	0.00057814341	5.0000000	5.0000000
472.84252	1.0000000	0.017384125	4.0000000	31.000000
501.76967	1.0000000	0.00096607125	6.0000000	4.0000000
508.37752	1.0000000	0.26498947	4.0000000	17.000000
513.38248	1.0000000	0.00041517577	4.0000000	5.0000000
515.35467	1.0000000	0.00019058171	4.0000000	13.000000
520.62283	1.0000000	0.00049437309	4.0000000	13.000000
521.61877	1.0000000	0.010764599	4.0000000	40.000000
522.60746	1.0000000	0.00075485554	5.0000000	5.0000000
541.51502	1.0000000	0.020366101	5.0000000	16.000000
547.37150	1.0000000	0.058582636	6.0000000	5.0000000
578.89252	1.0000000	0.013480938	5.0000000	31.000000
584.05877	1.0000000	0.019825902	6.0000000	16.000000
584.41252	1.0000000	0.016883442	7.0000000	14.000000
586.73964	1.0000000	0.00027326926	4.0000000	4.0000000
587.37099	1.0000000	0.1310850	7.0000000	5.0000000
589.37106	1.0000000	0.14975997	4.0000000	4.0000000
608.89920	1.0000000	0.0013001474	5.0000000	4.0000000
626.63174	1.0000000	0.00018768883	4.0000000	5.0000000
627.07752	1.0000000	0.023937949	4.0000000	17.000000
628.37122	1.0000000	0.11917777	4.0000000	5.0000000
628.97678	1.0000000	0.00021014093	4.0000000	4.0000000
636.83890	1.0000000	0.0013906102	7.0000000	13.000000
642.42502	1.0000000	0.024455661	4.0000000	18.000000
649.31380	1.0000000	0.0031480375	8.0000000	4.0000000
662.52752	1.0000000	0.024901692	4.0000000	16.000000

690.42276	1.0000000	0.00029969082	4.0000000	4.0000000
705.37126	1.0000000	0.03798566	5.0000000	5.0000000
706.60502	1.0000000	0.012676217	4.0000000	31.000000
721.88127	1.0000000	0.011831664	4.0000000	40.000000
761.73752	1.0000000	0.015192692	4.0000000	14.000000
764.97127	1.0000000	0.022298964	4.0000000	16.000000
783.19002	1.0000000	0.023918756	6.0000000	16.000000
788.41587	1.0000000	0.0037721019	8.0000000	5.0000000
799.10002	1.0000000	0.011880171	5.0000000	22.000000
816.59377	1.0000000	0.011915708	5.0000000	40.000000
824.31473	1.0000000	0.0016312427	7.0000000	5.0000000
830.07622	1.0000000	0.00037259924	5.0000000	4.0000000
833.58054	1.0000000	0.0004309429	4.0000000	5.0000000
861.70252	1.0000000	0.021737689	4.0000000	17.000000
864.05002	1.0000000	0.013613176	7.0000000	40.000000
895.22218	1.0000000	0.00041941222	4.0000000	5.0000000
895.97752	1.0000000	0.030607644	6.0000000	16.000000
925.60627	1.0000000	0.020817971	4.0000000	18.000000
926.82845	1.0000000	0.00038985612	4.0000000	5.0000000
938.58356	1.0000000	0.0019359875	7.0000000	5.0000000
943.87233	1.0000000	0.00092901283	5.0000000	5.0000000
952.87884	1.0000000	0.0010106591	7.0000000	5.0000000
975.26502	1.0000000	0.022894529	4.0000000	17.000000
979.45252	1.0000000	0.020871021	5.0000000	17.000000
984.12502	1.0000000	0.013584071	5.0000000	40.000000

Information **block number 11085**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
971.25627	1.0000000	0.016598794	4.0000000	18.000000
973.32409	1.0000000	0.0013382483	5.0000000	12.000000
974.18127	1.0000000	0.022427856	8.0000000	40.000000
977.74160	1.0000000	0.00027383188	5.0000000	4.0000000

Information **block number 17386**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
945.75252	1.0000000	0.033379545	8.0000000	18.000000
949.97127	1.0000000	0.023070234	5.0000000	18.000000
962.30001	1.0000000	0.0012386278	6.0000000	14.000000
966.39002	1.0000000	0.022198726	7.0000000	18.000000
978.19127	1.0000000	0.0232043	6.0000000	22.000000
999.09627	1.0000000	0.0098763355	6.0000000	5.0000000

Information **block number 17880**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
7.3312740	1.0000000	0.013676927	4.0000000	40.000000
10.212524	1.0000000	0.024799659	5.0000000	22.000000
23.337524	1.0000000	0.021324199	8.0000000	40.000000
30.530024	1.0000000	0.013154495	6.0000000	31.000000
33.371797	1.0000000	0.00033463279	4.0000000	5.0000000
39.850024	1.0000000	0.017196374	6.0000000	40.000000
50.468774	1.0000000	0.024202355	4.0000000	22.000000
51.480661	1.0000000	0.00045056411	5.0000000	12.000000
71.451047	1.0000000	0.00036761743	6.0000000	5.0000000
74.337524	1.0000000	0.011716267	4.0000000	18.000000
77.208050	1.0000000	0.00063744714	7.0000000	5.0000000
81.331274	1.0000000	0.0099999513	6.0000000	40.000000
96.092524	1.0000000	0.011099588	5.0000000	31.000000
110.71845	1.0000000	4.2000000e-005	7.0000000	5.0000000
120.53002	1.0000000	0.0089137163	4.0000000	31.000000
121.40502	1.0000000	0.0094080357	7.0000000	31.000000
122.98359	1.0000000	0.0011267759	5.0000000	12.000000
133.48627	1.0000000	0.014612694	8.0000000	31.000000
143.53627	1.0000000	0.014517462	4.0000000	31.000000
146.68127	1.0000000	0.010326488	4.0000000	40.000000
176.58502	1.0000000	0.00018166465	4.0000000	12.000000
177.63627	1.0000000	0.011579743	4.0000000	31.000000
186.66252	1.0000000	0.015226741	5.0000000	18.000000
187.22224	1.0000000	0.00056915373	7.0000000	4.000000
195.56252	1.0000000	0.012320616	7.0000000	18.000000

198.48349	1.0000000	0.00037493617	4.0000000	12.000000
198.51715	1.0000000	0.00013271468	4.0000000	5.0000000
229.78002	1.0000000	0.014553167	5.0000000	31.000000
238.35502	1.0000000	0.013519669	7.0000000	31.000000
258.61877	1.0000000	0.01399088	7.0000000	18.000000
261.39377	1.0000000	0.0090488562	5.0000000	40.000000
269.09377	1.0000000	0.020275121	4.0000000	22.000000
271.26877	1.0000000	0.014541791	6.0000000	40.000000
276.68010	1.0000000	0.00046870855	5.0000000	4.0000000
294.98752	1.0000000	0.021089938	5.0000000	22.000000
314.16127	1.0000000	0.010579377	7.0000000	31.000000
314.98002	1.0000000	0.013707841	4.0000000	31.000000
319.25002	1.0000000	0.008598813	4.0000000	40.000000
321.42502	1.0000000	0.0097559929	5.0000000	40.000000
328.30627	1.0000000	0.024740664	7.0000000	22.000000
340.99378	1.0000000	0.020533973	4.0000000	22.000000
354.23752	1.0000000	0.019706798	4.0000000	22.000000
384.99377	1.0000000	0.020920261	4.0000000	22.000000
395.51877	1.0000000	0.012676787	7.0000000	40.000000
399.17427	1.0000000	0.00027638769	4.0000000	4.0000000
412.56252	1.0000000	0.011963649	5.0000000	40.000000
414.60627	1.0000000	0.0081367674	4.0000000	40.000000
425.13560	1.0000000	0.0025596495	6.0000000	13.000000
437.18127	1.0000000	0.024837878	5.0000000	22.000000
441.03127	1.0000000	0.011373062	4.0000000	40.000000
456.63752	1.0000000	0.017203092	6.0000000	40.000000
464.78002	1.0000000	0.010340173	5.0000000	31.000000
466.47115	1.0000000	0.0010971693	6.0000000	4.0000000
513.88752	1.0000000	0.0088539794	4.0000000	40.000000
536.74821	1.0000000	4.2000000e-005	8.0000000	5.0000000
537.03002	1.0000000	0.012567223	4.0000000	31.000000
557.44877	1.0000000	0.019169655	8.0000000	31.000000
573.58626	1.0000000	0.00089891837	4.0000000	12.000000
573.75486	1.0000000	0.00077943172	4.0000000	12.000000
601.96877	1.0000000	0.019956064	6.0000000	22.000000
609.28127	1.0000000	0.022857817	5.0000000	22.000000
613.24713	1.0000000	0.00083002035	5.0000000	5.0000000
616.70627	1.0000000	0.0056776683	8.0000000	5.0000000
664.03127	1.0000000	0.01454836	8.0000000	40.000000
671.86252	1.0000000	0.0087878402	5.0000000	40.000000
675.18127	1.0000000	0.017081949	4.0000000	18.000000
692.58020	1.0000000	0.0012072165	6.0000000	12.000000
700.95002	1.0000000	0.0099441086	5.0000000	40.000000
712.83002	1.0000000	0.0096281603	4.0000000	31.000000
715.39252	1.0000000	0.0087999259	5.0000000	31.000000
727.12163	1.0000000	0.004335086	7.0000000	12.000000
746.93127	1.0000000	0.023949586	4.0000000	22.000000
747.30627	1.0000000	0.020721228	7.0000000	22.000000
747.95627	1.0000000	0.013444801	4.0000000	40.000000
778.63814	1.0000000	0.00011737615	4.0000000	4.0000000
780.76127	1.0000000	0.01138595	4.0000000	31.000000
790.42502	1.0000000	0.028862081	5.0000000	22.000000
795.93628	1.0000000	0.013825774	5.0000000	31.000000
797.66565	1.0000000	0.00046606977	5.0000000	5.0000000
804.56877	1.0000000	0.020175446	6.0000000	22.000000
809.34877	1.0000000	0.0087758201	5.0000000	31.000000
813.46877	1.0000000	0.015403733	7.0000000	18.000000
819.10502	1.0000000	0.010856398	7.0000000	31.000000
820.36275	1.0000000	0.00066892489	5.0000000	4.0000000
820.42400	1.0000000	0.0017719512	4.0000000	12.000000
820.46127	1.0000000	0.012069057	7.0000000	31.00000
826.23127	1.0000000	0.014722499	7.0000000	18.000000
869.30368	1.0000000	4.2000000e-005	4.0000000	5.0000000
881.26252	1.0000000	0.0091348298	5.0000000	40.000000
887.39778	1.0000000	0.00073939382	5.0000000	5.0000000
923.43389	1.0000000	0.0076216048	8.0000000	13.000000
926.22331	1.0000000	0.00034088006	6.0000000	5.0000000
965.27377	1.0000000	0.014761841	4.0000000	31.000000
984.01641	1.0000000	0.0001921945	4.0000000	4.0000000
985.27502	1.0000000	0.022707565	8.0000000	22.000000

Information **block number 26376**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
945.75378	1.0000000	0.034633545	4.0000000	22.000000
949.98502	1.0000000	0.036820234	4.0000000	22.000000
962.29984	1.0000000	0.0010746885	7.0000000	10.000000
966.40378	1.0000000	0.035952726	5.0000000	22.000000
978.20502	1.0000000	0.0369543	4.0000000	31.000000
999.08667	1.0000000	0.00027111761	4.0000000	7.0000000

Information **block number 38893**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
914.86627	1.0000000	0.020054318	8.0000000	26.000000
951.13627	1.0000000	0.011463601	4.0000000	27.000000

Information **block number 43037**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
730.66502	1.0000000	0.014713369	4.0000000	4.0000000
740.82622	1.0000000	0.00047802686	4.0000000	28.000000
758.57198	1.0000000	0.00061894024	5.0000000	29.000000
764.28502	1.0000000	0.041243963	4.0000000	40.000000
769.28502	1.0000000	0.01159624	5.0000000	5.0000000
773.82883	1.0000000	0.0010069578	5.0000000	22.000000
774.14337	1.0000000	0.00019362809	4.0000000	28.000000
797.17574	1.0000000	0.00011473178	4.0000000	22.000000
823.16897	1.0000000	0.00017429479	4.0000000	28.000000
824.17015	1.0000000	0.00038548898	4.0000000	29.000000
828.83626	1.0000000	0.00012197669	4.0000000	27.000000
829.62776	1.0000000	0.00098009246	7.0000000	28.000000
829.92498	1.0000000	0.0013306597	5.0000000	27.000000
843.52555	1.0000000	0.00089689498	7.0000000	29.000000
844.47642	1.0000000	0.0013265002	5.0000000	29.000000
860.06252	1.0000000	0.012221056	4.0000000	23.000000
869.78913	1.0000000	4.2000000e-005	5.0000000	22.000000
878.33821	1.0000000	0.0002859418	4.0000000	26.000000
879.21689	1.0000000	0.001085933	5.0000000	27.000000
911.75585	1.0000000	0.0002486081	4.0000000	25.000000
925.44127	1.0000000	0.010292461	4.0000000	5.0000000
938.75877	1.0000000	0.024261217	5.0000000	31.000000
948.18390	1.0000000	4.2000000e-005	4.0000000	22.000000
976.82919	1.0000000	0.0014682549	5.0000000	30.000000
995.51002	1.0000000	0.040051766	5.0000000	40.000000

Information **block number 58438**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
12.649282	1.0000000	0.00055111158	5.0000000	37.000000
23.606274	1.0000000	0.012877992	4.0000000	33.000000
36.631274	1.0000000	0.01360565	5.0000000	32.000000
67.676274	1.0000000	0.010199173	5.0000000	5.0000000
86.779597	1.0000000	0.0010626454	5.0000000	38.000000
90.606274	1.0000000	0.016403838	4.0000000	33.000000
114.04769	1.0000000	0.00043547023	4.0000000	35.000000
135.14730	1.0000000	0.00033812517	4.0000000	34.000000
146.91377	1.0000000	0.0092056069	4.0000000	5.0000000
155.51305	1.0000000	0.00031021443	4.0000000	39.000000
157.24471	1.0000000	0.00038616793	4.0000000	37.000000
170.26877	1.0000000	0.014521729	5.0000000	32.000000
187.33752	1.0000000	0.016575379	7.0000000	4.0000000
203.36815	1.0000000	0.00023360198	4.0000000	36.000000
204.34002	1.0000000	0.025792206	4.0000000	22.000000
207.78197	1.0000000	0.00018130315	4.0000000	35.000000
224.35817	1.0000000	0.00063367625	5.0000000	35.000000
225.79377	1.0000000	0.013058301	4.0000000	33.000000
229.93933	1.0000000	0.00086853232	7.0000000	36.000000
245.36303	1.0000000	0.00031119206	4.0000000	36.000000
262.40442	1.0000000	0.0013153777	6.0000000	37.000000
268.25720	1.0000000	0.0011753068	5.0000000	37.000000
299.12627	1.0000000	0.011391272	5.0000000	5.0000000
303.76877	1.0000000	0.012090401	5.0000000	33.000000
307.03573	1.0000000	0.00035115605	4.0000000	35.000000

311.30002	1.0000000	0.014082537	5.0000000	32.000000
334.67818	1.0000000	0.00025684137	4.0000000	37.000000
356.51767	1.0000000	0.00040187676	4.0000000	37.000000
358.55002	1.0000000	0.016510959	7.0000000	32.000000
382.82990	1.0000000	0.00051023394	5.0000000	37.000000
389.25877	1.0000000	0.027492657	4.0000000	22.000000
393.61877	1.0000000	0.015673833	4.0000000	33.000000
408.40121	1.0000000	0.0018331125	7.0000000	34.000000
427.99031	1.0000000	0.00068328423	5.0000000	31.000000
439.68139	1.0000000	0.00044383732	4.0000000	39.000000
451.60627	1.0000000	0.011811258	5.0000000	4.0000000
451.77387	1.0000000	0.0012555636	6.0000000	31.000000
455.17324	1.0000000	0.00081184954	5.0000000	31.000000
455.55752	1.0000000	0.022823245	4.0000000	18.000000
462.18376	1.0000000	0.00021134979	4.0000000	31.000000
464.75975	1.0000000	0.0003538776	4.0000000	34.000000
477.41372	1.0000000	0.00023567088	4.0000000	36.000000
503.72705	1.0000000	4.2000000e-005	8.0000000	31.000000
503.77928	1.0000000	0.0002614175	4.0000000	36.000000
511.63403	1.0000000	0.0023779242	7.0000000	31.000000
526.72620	1.0000000	0.000301239	4.0000000	37.000000
531.06502	1.0000000	0.027452378	5.0000000	22.000000
540.73752	1.0000000	0.013381537	4.0000000	32.000000
564.02252	1.0000000	6.2599613e-005	4.0000000	37.000000
565.95002	1.0000000	0.012006106	5.0000000	33.000000
566.80555	1.0000000	0.00028278777	4.0000000	37.000000
576.78877	1.0000000	0.010672797	4.0000000	5.0000000
596.22127	1.0000000	0.024557181	5.0000000	22.000000
609.88496	1.0000000	0.00092995494	5.0000000	39.000000
613.54860	1.0000000	0.00032001278	4.0000000	35.000000
616.76096	1.0000000	0.00012125211	4.0000000	37.000000
626.90296	1.0000000	0.00017535286	4.0000000	35.000000
638.31725	1.0000000	0.00040569025	4.0000000	35.000000
645.44377	1.0000000	0.016391153	7.0000000	33.000000
709.60504	1.0000000	0.0080732587	8.0000000	35.000000
715.33938	1.0000000	0.00075444546	5.0000000	35.000000
718.01252	1.0000000	0.01418875	4.0000000	32.000000
729.70002	1.0000000	0.015063429	4.0000000	32.000000
745.87502	1.0000000	0.011366928	4.0000000	33.000000
750.65120	1.0000000	0.0014874111	6.0000000	37.000000
761.24002	1.0000000	0.023807711	6.0000000	22.000000
763.45165	1.0000000	0.00072471572	5.0000000	37.000000
769.07772	1.0000000	0.0002568019	4.0000000	35.000000
777.16790	1.0000000	0.00088435924	5.0000000	35.000000
781.08164	1.0000000	0.0013958127	5.0000000	39.000000
784.74776	1.0000000	0.0002442788	4.0000000	36.000000
816.71252	1.0000000	0.016663501	4.0000000	32.000000
822.23403	1.0000000	0.00027939958	4.0000000	34.000000
836.53877	1.0000000	0.023528528	4.0000000	18.000000
840.46252	1.0000000	0.013368031	5.0000000	4.0000000
851.85387	1.0000000	0.00040656854	5.0000000	31.000000
856.24715	1.0000000	0.00019104425	4.0000000	39.000000
865.73127	1.0000000	0.0083387247	4.0000000	4.0000000
877.69002	1.0000000	0.028044721	5.0000000	22.000000
878.13619	1.0000000	0.00047969368	5.0000000	37.000000
886.78341	1.0000000	0.00070100053	5.0000000	39.000000
912.10308	1.0000000	0.00076502452	6.0000000	39.000000
936.82990	1.0000000	0.00025217744	5.0000000	37.000000
940.26377	1.0000000	0.025561698	6.0000000	18.000000
955.96252	1.0000000	0.011163882	4.0000000	4.0000000
991.96704	1.0000000	0.00072356187	5.0000000	35.000000

Information **block number 69342**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
7.3387740	1.0000000	0.021176927	4.0000000	47.000000
10.196274	1.0000000	0.0085496588	4.0000000	43.000000
23.333774	1.0000000	0.017574199	7.0000000	48.000000
30.530024	1.0000000	0.013154495	4.0000000	45.000000
33.387524	1.0000000	0.016061595	4.0000000	40.000000

39.857524	1.0000000	0.024696374	7.0000000	47.000000
50.453774	1.0000000	0.0092023554	5.0000000	44.000000
51.480973	1.0000000	0.0007631805	5.0000000	41.000000
71.462524	1.0000000	0.011844714	6.0000000	40.000000
74.348774	1.0000000	0.022966267	7.0000000	42.000000
77.218774	1.0000000	0.011361035	4.0000000	40.000000
81.345024	1.0000000	0.023749951	4.0000000	47.000000
96.093774	1.0000000	0.012349588	4.0000000	46.000000
110.73127	1.0000000	0.012870011	4.0000000	40.000000
120.53752	1.0000000	0.016413716	4.0000000	46.000000
121.41252	1.0000000	0.016908036	7.0000000	46.000000
122.98296	1.0000000	0.00050134336	4.0000000	41.000000
133.48627	1.0000000	0.014612694	6.0000000	45.000000
143.53752	1.0000000	0.015767462	4.0000000	46.000000
146.69502	1.0000000	0.024076488	4.0000000	47.000000
176.58743	1.0000000	0.0025971383	8.0000000	41.000000
177.63752	1.0000000	0.012829743	4.0000000	46.000000
186.67377	1.0000000	0.026476741	4.0000000	42.000000
187.23752	1.0000000	0.015852036	4.0000000	40.000000
195.57377	1.0000000	0.023570616	4.0000000	42.000000
198.48351	1.0000000	0.00039212266	4.0000000	41.000000
198.53127	1.0000000	0.014259884	5.0000000	40.000000
229.78127	1.0000000	0.015803167	5.0000000	46.000000
238.35627	1.0000000	0.014769669	4.0000000	46.000000
258.63002	1.0000000	0.02524088	4.0000000	42.000000
261.39627	1.0000000	0.011548856	4.0000000	48.000000
269.08502	1.0000000	0.011525121	4.0000000	44.000000
271.26502	1.0000000	0.010791791	5.0000000	48.000000
276.69377	1.0000000	0.014140968	7.0000000	40.000000
294.97752	1.0000000	0.011089938	5.0000000	43.000000
314.16252	1.0000000	0.011829377	7.0000000	46.000000
314.98627	1.0000000	0.019957841	8.0000000	45.000000
319.26377	1.0000000	0.022348813	4.0000000	47.000000
321.43877	1.0000000	0.023505993	5.0000000	47.000000
328.29127	1.0000000	0.0097406645	5.0000000	44.000000
340.99127	1.0000000	0.018029973	4.0000000	44.000000
354.23502	1.0000000	0.017206798	8.0000000	44.000000
384.98502	1.0000000	0.012170261	5.0000000	44.000000
395.52627	1.0000000	0.020176787	7.0000000	47.000000
399.18752	1.0000000	0.013534933	7.0000000	40.000000
412.55877	1.0000000	0.0082136495	4.0000000	48.000000
414.61502	1.0000000	0.016886767	5.0000000	48.000000
425.16752	1.0000000	0.034484566	5.0000000	42.000000
437.16627	1.0000000	0.0098378783	7.0000000	44.000000
441.02752	1.0000000	0.0076230619	6.0000000	48.000000
456.64002	1.0000000	0.019703092	5.0000000	48.000000
464.78127	1.0000000	0.011590173	5.0000000	46.000000
466.48752	1.0000000	0.017473107	8.0000000	40.000000
513.90127	1.0000000	0.022603979	7.0000000	47.000000
536.76252	1.0000000	0.014357882	4.0000000	40.000000
537.03002	1.0000000	0.012567223	4.0000000	45.000000
557.46127	1.0000000	0.031669655	8.0000000	45.000000
573.59300	1.0000000	0.0076386522	8.0000000	41.000000
573.75445	1.0000000	0.00036652716	4.0000000	41.000000
601.97127	1.0000000	0.022456064	8.0000000	43.000000
609.27252	1.0000000	0.014107817	4.0000000	44.000000
613.26252	1.0000000	0.016224461	4.0000000	40.000000
616.71252	1.0000000	0.011932545	6.0000000	40.000000
671.86502	1.0000000	0.01128784	4.0000000	48.000000
675.19252	1.0000000	0.028331949	5.0000000	42.000000
692.57959	1.0000000	0.00058912371	4.0000000	41.000000
700.96377	1.0000000	0.023694109	4.0000000	47.000000
712.84252	1.0000000	0.02212816	6.0000000	45.000000
715.40002	1.0000000	0.016299926	7.0000000	46.000000
727.11791	1.0000000	0.0006215403	5.0000000	41.000000
746.91627	1.0000000	0.008949586	5.0000000	44.000000
747.29627	1.0000000	0.010721228	7.0000000	43.000000
747.96377	1.0000000	0.020944801	4.0000000	47.000000
778.65002	1.0000000	0.012003732	4.0000000	40.000000
780.77377	1.0000000	0.02388595	4.0000000	45.000000
790.41502	1.0000000	0.018862081	5.0000000	43.000000
795.93752	1.0000000	0.015071774	6.0000000	46.000000

797.68127	1.0000000	0.016088777	8.0000000	40.000000
804.56627	1.0000000	0.017675446	4.0000000	44.000000
809.35502	1.0000000	0.01502582	7.0000000	45.000000
813.48627	1.0000000	0.032903733	5.0000000	42.000000
819.10502	1.0000000	0.010856398	5.0000000	45.000000
820.37502	1.0000000	0.012945593	6.0000000	40.000000
820.42348	1.0000000	0.0012567911	6.0000000	41.000000
820.46252	1.0000000	0.013319057	4.0000000	46.000000
826.24877	1.0000000	0.032222499	4.0000000	42.000000
869.33127	1.0000000	0.027636548	8.0000000	40.000000
881.27752	1.0000000	0.02413483	4.0000000	48.000000
887.41252	1.0000000	0.015483975	7.0000000	40.000000
923.46752	1.0000000	0.041252449	4.0000000	42.000000
926.23752	1.0000000	0.01455227	5.0000000	40.000000
965.27377	1.0000000	0.014761841	4.0000000	45.000000
984.03127	1.0000000	0.015052237	4.0000000	40.000000
985.26627	1.0000000	0.013957565	8.0000000	44.000000

Information **block number 77152**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
9.1401588	1.0000000	0.00046579408	7.0000000	44.000000
13.471352	1.0000000	0.0016747214	7.0000000	48.000000
29.193620	1.0000000	0.00014844459	4.0000000	46.000000
30.447524	1.0000000	0.015670494	6.0000000	5.0000000
33.520024	1.0000000	0.0099044399	5.0000000	41.000000
34.605024	1.0000000	0.024060722	5.0000000	18.000000
58.709581	1.0000000	0.00018145615	4.0000000	48.000000
92.809300	1.0000000	0.0010204757	5.0000000	44.000000
96.807524	1.0000000	0.0094669033	4.0000000	41.000000
104.74223	1.0000000	0.00028221127	4.0000000	46.000000
105.68124	1.0000000	0.00025785275	6.0000000	47.000000
127.52377	1.0000000	0.024644058	4.0000000	18.000000
131.14468	1.0000000	0.00073562136	5.0000000	43.000000
138.61854	1.0000000	0.001233384	7.0000000	47.000000
152.53252	1.0000000	0.011194378	4.0000000	41.000000
174.39502	1.0000000	0.0084118894	4.0000000	41.000000
177.25895	1.0000000	0.00037474349	4.0000000	43.000000
182.89882	1.0000000	0.00015196585	5.0000000	44.000000
188.93472	1.0000000	0.0026050644	8.0000000	46.000000
189.43002	1.0000000	0.025790779	5.0000000	18.000000
191.74853	1.0000000	0.00086478699	5.0000000	46.000000
192.65193	1.0000000	0.0037936204	8.0000000	46.000000
198.20127	1.0000000	0.02077275	4.0000000	31.000000
207.54463	1.0000000	0.0017629035	6.0000000	46.000000
214.32452	1.0000000	0.00071037192	7.0000000	44.000000
219.08752	1.0000000	0.016012195	4.0000000	42.000000
220.85299	1.0000000	0.00020528823	4.0000000	44.000000
222.20539	1.0000000	0.00047829614	4.0000000	40.000000
230.63358	1.0000000	0.00038816835	4.0000000	43.000000
243.93002	1.0000000	0.028310281	5.0000000	18.000000
246.95127	1.0000000	0.0099152487	4.0000000	41.000000
253.23500	1.0000000	0.00084635288	5.0000000	46.000000
255.30014	1.0000000	0.0026950847	8.0000000	40.000000
263.98502	1.0000000	0.014714476	6.0000000	5.0000000
289.04486	1.0000000	0.00093772236	7.0000000	45.000000
289.30982	1.0000000	0.0011784249	5.0000000	46.000000
295.56877	1.0000000	0.013254334	4.0000000	42.000000
309.56127	1.0000000	0.026525851	5.0000000	18.000000
309.90583	1.0000000	0.00062335461	4.0000000	43.000000
311.09377	1.0000000	0.013359889	4.0000000	42.000000
322.74608	1.0000000	0.00040836536	4.0000000	40.000000
324.61476	1.0000000	0.00029494036	4.0000000	48.000000
337.36252	1.0000000	0.016051561	4.0000000	42.000000
343.96299	1.0000000	0.0002308738	4.0000000	45.000000
362.88252	1.0000000	0.008867086	4.0000000	41.000000
377.88871	1.0000000	0.00045214143	4.0000000	44.000000
380.80127	1.0000000	0.024232532	5.0000000	31.000000
389.26367	1.0000000	0.00075909781	5.0000000	40.000000
425.40577	1.0000000	0.0015508728	7.0000000	44.000000
441.62002	1.0000000	0.011784119	4.0000000	41.000000
450.63718	1.0000000	0.0004587307	4.0000000	46.000000

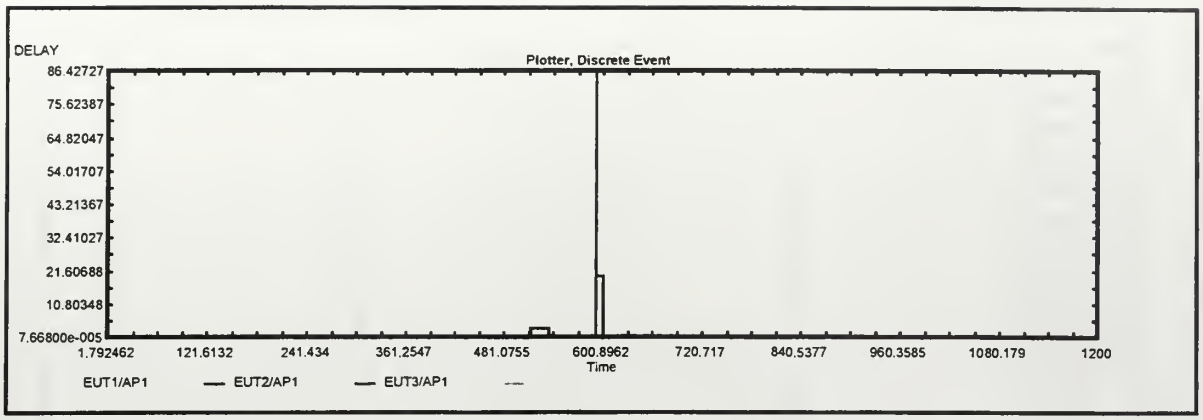
476.24877	1.0000000	0.027653504	4.0000000	18.000000
494.38409	1.0000000	0.00037167548	5.0000000	43.000000
512.21395	1.0000000	0.00078538202	5.0000000	43.000000
547.54528	1.0000000	0.00042992591	4.0000000	45.000000
565.93254	1.0000000	0.00037184767	4.0000000	45.000000
569.41252	1.0000000	0.010815743	4.0000000	42.000000
578.57502	1.0000000	0.015065601	4.0000000	42.000000
579.57002	1.0000000	0.025846011	6.0000000	31.000000
589.60127	1.0000000	0.017600802	5.0000000	41.000000
592.00503	1.0000000	0.0063037008	8.0000000	47.000000
601.03925	1.0000000	0.00030379401	4.0000000	47.000000
609.56002	1.0000000	0.011751512	5.0000000	5.0000000
615.65922	1.0000000	0.00058408898	4.0000000	43.000000
620.17412	1.0000000	0.00032158115	4.0000000	46.000000
647.74252	1.0000000	0.025385638	5.0000000	18.000000
654.76407	1.0000000	4.2000000e-005	5.0000000	40.000000
658.47127	1.0000000	0.011449915	4.0000000	4.0000000
667.30627	1.0000000	0.03657145	5.0000000	22.000000
671.51763	1.0000000	0.00047142009	4.0000000	44.000000
678.70752	1.0000000	0.024491504	4.0000000	31.000000
679.53857	1.0000000	0.00058813056	5.0000000	47.000000
711.37441	1.0000000	0.00018367555	4.0000000	46.000000
715.28265	1.0000000	0.00093955147	5.0000000	47.000000
717.69429	1.0000000	0.0023415671	8.0000000	46.000000
749.35127	1.0000000	0.027422589	8.0000000	31.000000
778.26922	1.0000000	0.00089815419	5.0000000	44.000000
789.61877	1.0000000	0.035668553	7.0000000	22.000000
802.68252	1.0000000	0.021177778	5.0000000	31.000000
809.08751	1.0000000	0.00041678418	4.0000000	46.000000
812.96565	1.0000000	0.0065178743	8.0000000	46.000000
832.49830	1.0000000	0.00055588962	8.0000000	46.000000
839.61711	1.0000000	0.00032235129	4.0000000	48.000000
842.65865	1.0000000	0.0002061425	4.0000000	43.000000
851.67694	1.0000000	6.0000000e-005	5.0000000	48.000000
852.31752	1.0000000	0.027885627	4.0000000	18.000000
854.28252	1.0000000	0.023749061	4.0000000	31.000000
857.34070	1.0000000	0.000469373	5.0000000	43.000000
872.59958	1.0000000	0.0012932995	7.0000000	43.000000
893.78128	1.0000000	0.00079775721	5.0000000	40.000000
915.59732	1.0000000	6.6262991e-005	4.0000000	47.000000
926.41877	1.0000000	0.015186252	7.0000000	42.000000
949.83752	1.0000000	0.016545172	8.0000000	42.000000
949.86102	1.0000000	0.00032457804	4.0000000	40.000000
977.58067	1.0000000	0.0026429956	8.0000000	43.000000

Information **block number 83021**

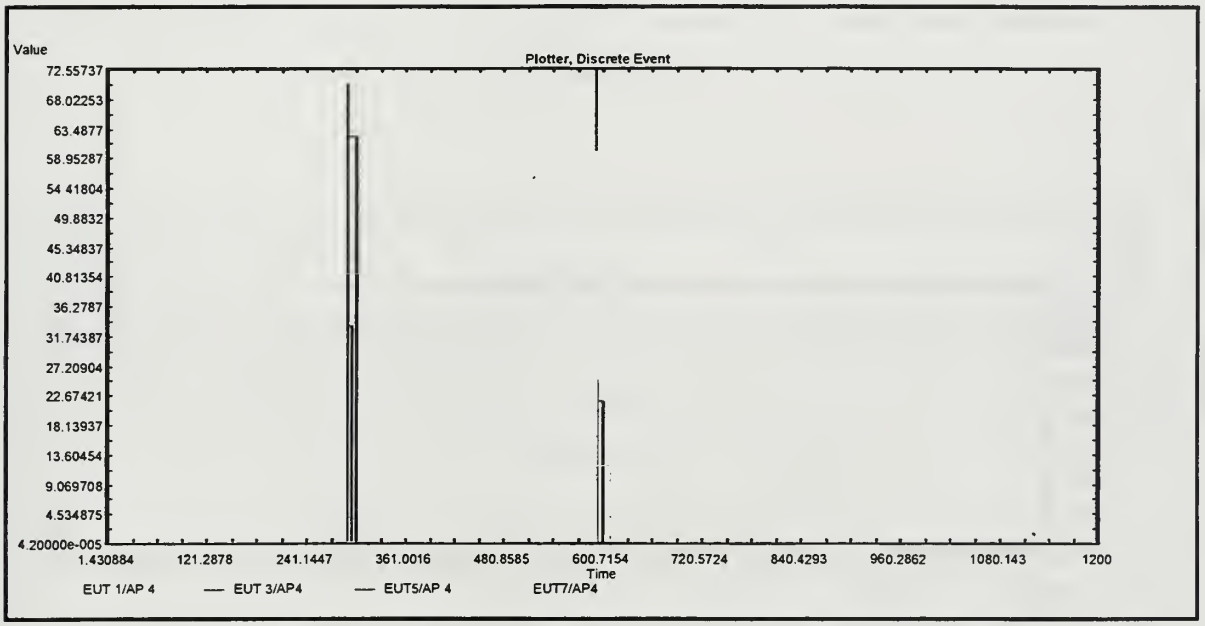
Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
7.3191067	1.0000000	0.0015095823	6.0000000	17.000000
10.398774	1.0000000	0.21104966	8.0000000	5.0000000
23.317885	1.0000000	0.0016848005	4.0000000	17.000000
30.517990	1.0000000	0.0011208653	4.0000000	16.000000
33.398778	1.0000000	0.027315595	4.0000000	4.0000000
39.833751	1.0000000	0.000923802	4.0000000	17.000000
50.461278	1.0000000	0.016706355	4.0000000	5.0000000
51.505028	1.0000000	0.024817794	7.0000000	4.0000000
71.480028	1.0000000	0.029348714	5.0000000	4.0000000
74.342528	1.0000000	0.016720267	5.0000000	5.0000000
77.392528	1.0000000	0.18511504	6.0000000	4.0000000
81.322014	1.0000000	0.00074014172	4.0000000	17.000000
96.082011	1.0000000	0.00058668771	5.0000000	16.000000
110.74253	1.0000000	0.024124011	4.0000000	4.0000000
120.52386	1.0000000	0.0027469766	5.0000000	16.000000
121.39742	1.0000000	0.0018024845	4.0000000	16.000000
123.01128	1.0000000	0.02881558	5.0000000	4.0000000
133.47268	1.0000000	0.0010200902	5.0000000	16.000000
143.52286	1.0000000	0.0011051389	7.0000000	16.000000
146.67221	1.0000000	0.0012641775	4.0000000	17.000000
176.61128	1.0000000	0.026441603	5.0000000	4.0000000
177.62612	1.0000000	0.0014236492	4.0000000	16.000000
186.68002	1.0000000	0.032726741	8.0000000	5.0000000
187.24878	1.0000000	0.027106036	6.0000000	4.0000000

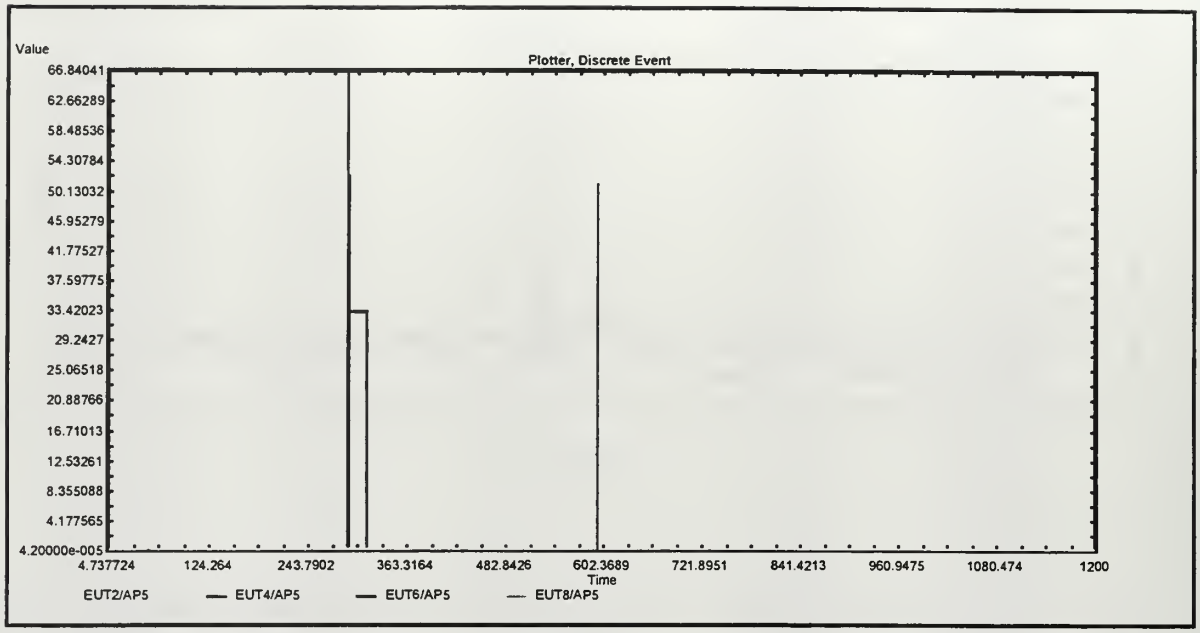
195.57377	1.0000000	0.023570616	6.0000000	5.0000000
198.52377	1.0000000	0.040657413	8.0000000	4.0000000
198.54253	1.0000000	0.025513884	4.0000000	4.0000000
229.76657	1.0000000	0.0011019462	5.0000000	16.000000
238.34276	1.0000000	0.0012598557	5.0000000	16.000000
258.62377	1.0000000	0.01899088	5.0000000	5.0000000
261.38539	1.0000000	0.00066839592	7.0000000	17.000000
269.08627	1.0000000	0.012775121	4.0000000	5.0000000
271.38035	1.0000000	0.12611851	4.0000000	17.000000
276.70502	1.0000000	0.025390968	7.0000000	4.0000000
294.98627	1.0000000	0.019839938	7.0000000	5.0000000
314.15346	1.0000000	0.0027661798	5.0000000	16.000000
314.96745	1.0000000	0.0011366253	5.0000000	16.000000
319.24225	1.0000000	0.00082388358	4.0000000	17.000000
321.41576	1.0000000	0.00049213714	4.0000000	17.000000
328.29877	1.0000000	0.017240664	4.0000000	5.0000000
340.99252	1.0000000	0.019279973	8.0000000	5.0000000
354.23002	1.0000000	0.012206798	4.0000000	5.0000000
384.99877	1.0000000	0.025920261	8.0000000	5.0000000
395.50816	1.0000000	0.002061838	5.0000000	17.000000
399.19878	1.0000000	0.024788933	4.0000000	4.0000000
412.55136	1.0000000	0.0007993266	5.0000000	17.000000
414.59939	1.0000000	0.0012565308	7.0000000	17.000000
425.14878	1.0000000	0.015738566	4.0000000	5.0000000
437.18002	1.0000000	0.023587878	8.0000000	5.0000000
441.02065	1.0000000	0.00074801782	4.0000000	17.000000
456.62182	1.0000000	0.0014990766	4.0000000	17.000000
464.77178	1.0000000	0.0020973353	5.0000000	16.000000
466.49878	1.0000000	0.028727107	5.0000000	4.0000000
513.88611	1.0000000	0.0074424707	5.0000000	17.000000
536.77378	1.0000000	0.025611882	4.0000000	4.0000000
537.01863	1.0000000	0.0011759923	4.0000000	16.000000
557.43083	1.0000000	0.00122488	4.0000000	16.000000
573.61128	1.0000000	0.025913115	5.0000000	4.0000000
573.78003	1.0000000	0.025942674	4.0000000	4.0000000
601.96127	1.0000000	0.012456064	6.0000000	5.0000000
609.27378	1.0000000	0.015361817	4.0000000	5.0000000
613.38628	1.0000000	0.13997846	4.0000000	4.0000000
616.73003	1.0000000	0.029436545	7.0000000	4.0000000
664.02354	1.0000000	0.0068159823	8.0000000	17.000000
671.85433	1.0000000	0.00058921993	4.0000000	17.000000
675.18003	1.0000000	0.015835949	4.0000000	5.0000000
692.60503	1.0000000	0.026030815	4.0000000	4.0000000
700.94148	1.0000000	0.0014012686	6.0000000	17.000000
712.82307	1.0000000	0.0026723333	5.0000000	16.000000
715.38475	1.0000000	0.0010283597	5.0000000	16.000000
727.39252	1.0000000	0.27523068	8.0000000	4.0000000
746.93002	1.0000000	0.022699586	5.0000000	5.0000000
747.29878	1.0000000	0.013225228	4.0000000	5.0000000
747.94401	1.0000000	0.0011804985	5.0000000	17.000000
778.66753	1.0000000	0.029507732	4.0000000	4.0000000
780.75099	1.0000000	0.001099252	4.0000000	16.000000
790.41128	1.0000000	0.015116081	5.0000000	5.0000000
795.92350	1.0000000	0.0010441569	6.0000000	16.000000
797.69253	1.0000000	0.027342777	4.0000000	4.0000000
804.56753	1.0000000	0.018929446	4.0000000	5.0000000
809.34193	1.0000000	0.0019364654	5.0000000	16.000000
813.46753	1.0000000	0.014157733	4.0000000	5.0000000
819.09463	1.0000000	0.00046142413	4.0000000	16.000000
820.38628	1.0000000	0.024199593	4.0000000	4.0000000
820.44878	1.0000000	0.026554216	4.0000000	4.0000000
820.45128	1.0000000	0.0020735144	7.0000000	16.000000
826.23003	1.0000000	0.013476499	4.0000000	5.0000000
869.33003	1.0000000	0.026390548	5.0000000	4.0000000
881.25410	1.0000000	0.0007136487	4.0000000	17.000000
887.42378	1.0000000	0.026737975	4.0000000	4.0000000
923.44878	1.0000000	0.022506449	4.0000000	5.0000000
926.24878	1.0000000	0.02580627	5.0000000	4.0000000
965.26144	1.0000000	0.0024276304	7.0000000	16.000000
984.04253	1.0000000	0.026306237	7.0000000	4.0000000
985.26752	1.0000000	0.015207565	4.0000000	5.0000000



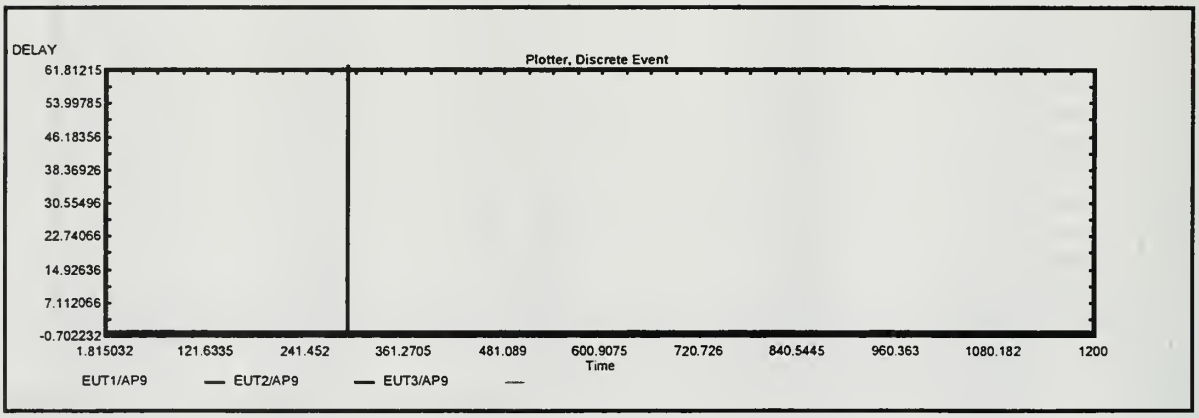
Run 1 AP1



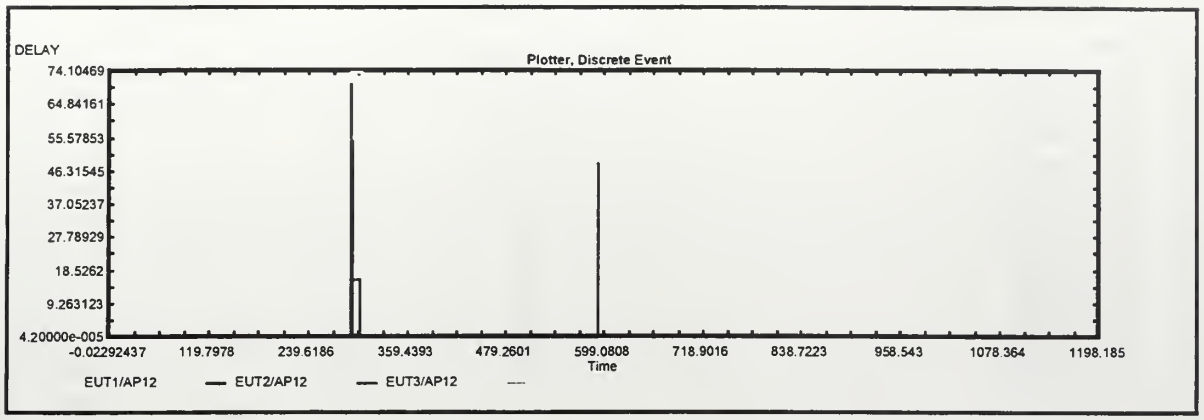
Run 1 AP 4



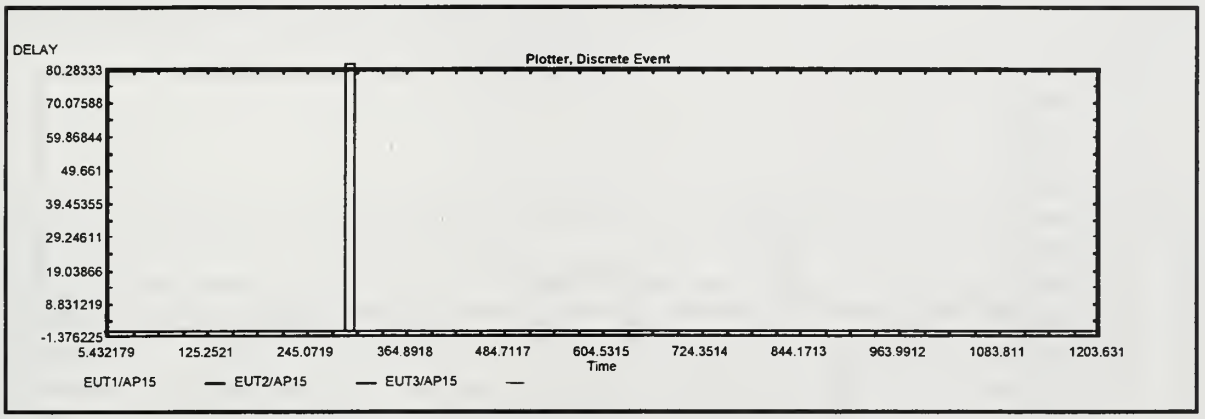
Run 1 AP 5



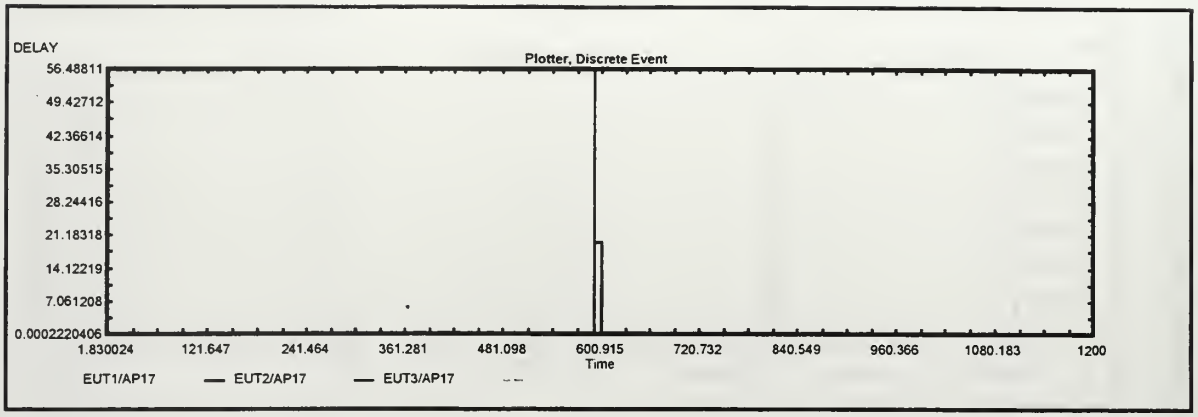
Run 1 AP 9



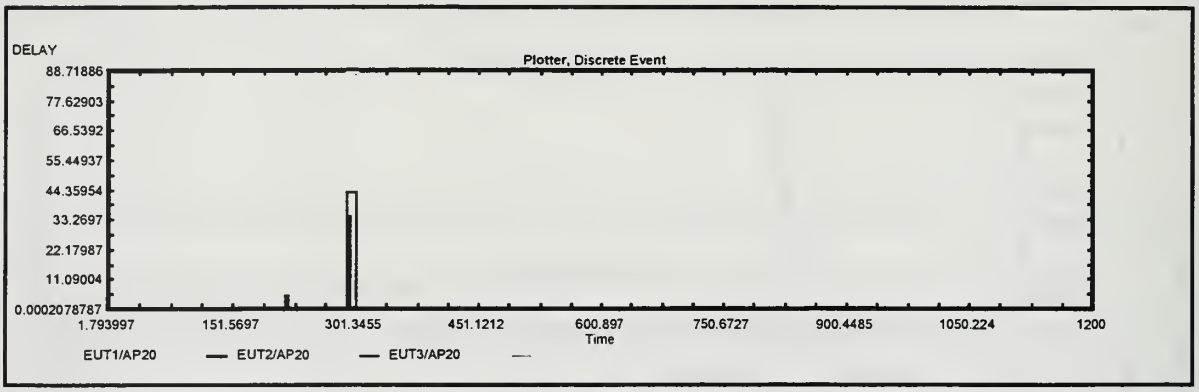
Run 1 AP 12



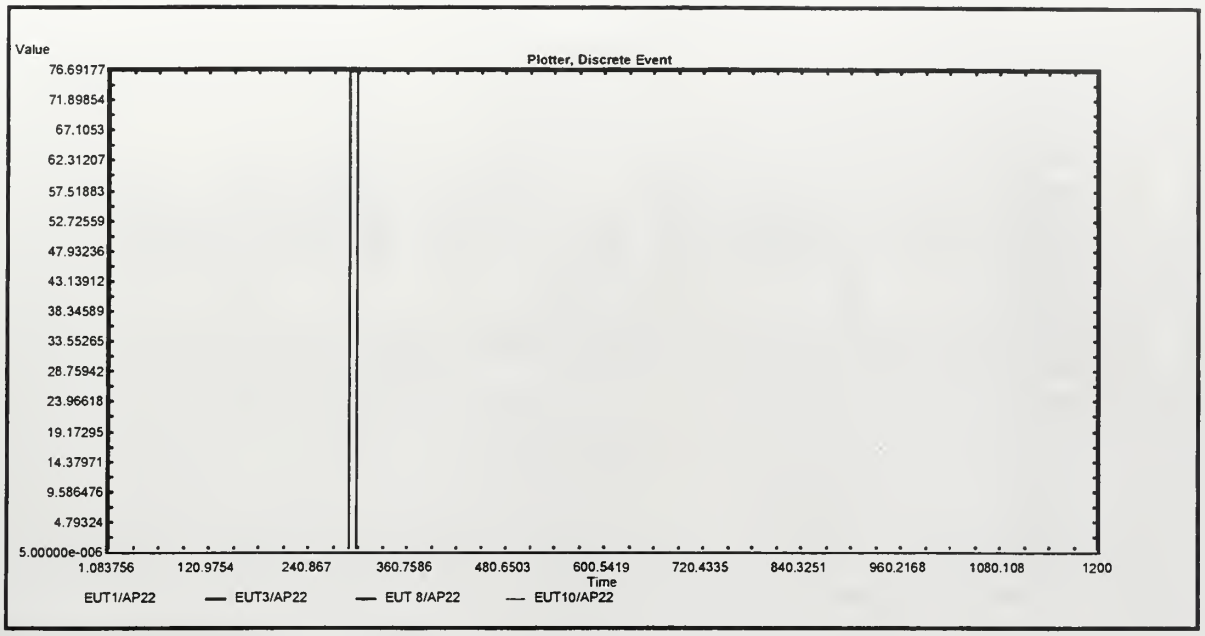
Run 1 AP 15



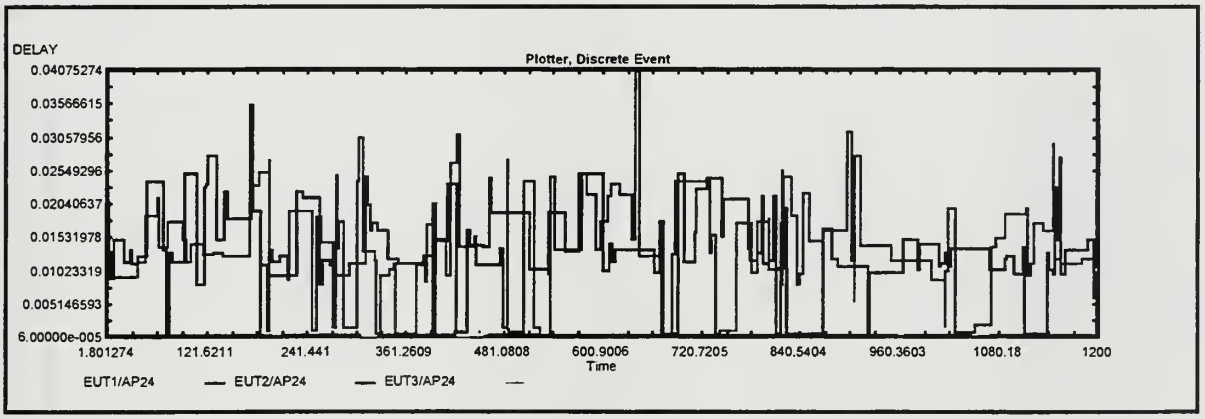
Run 1 AP 17



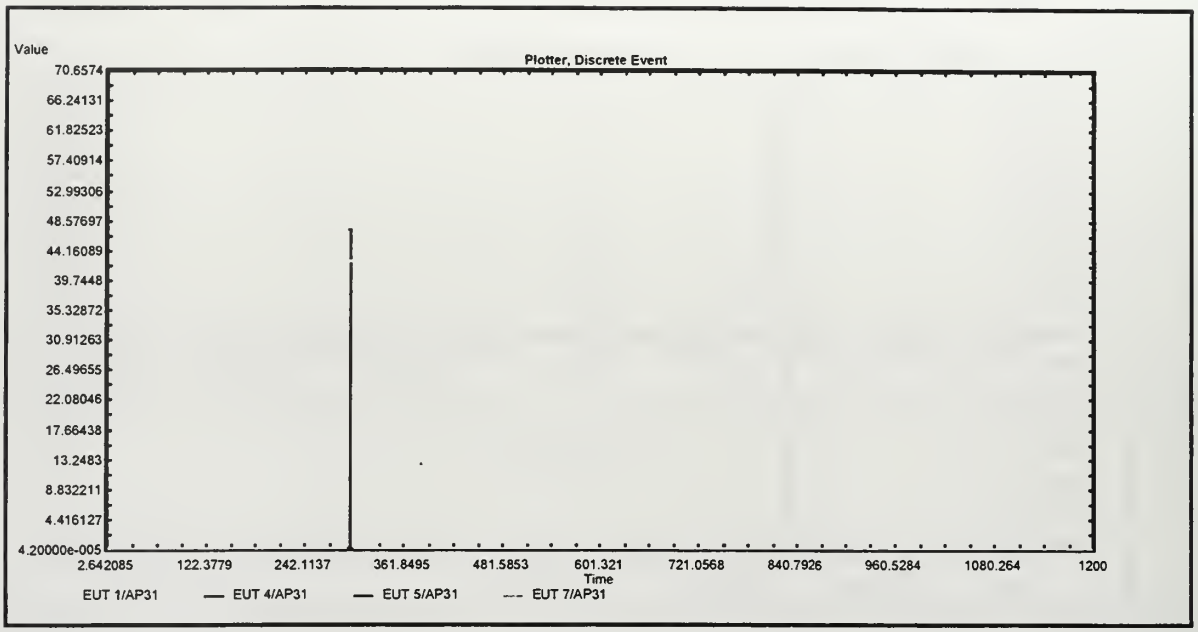
Run 1 AP 20



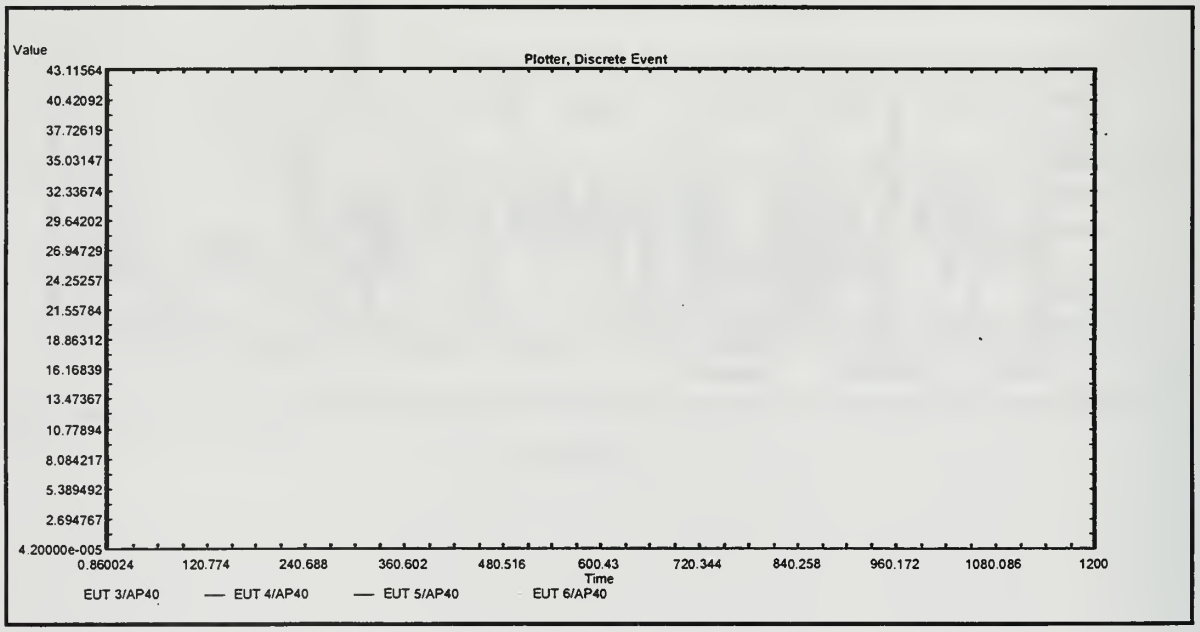
Run 1 AP 22



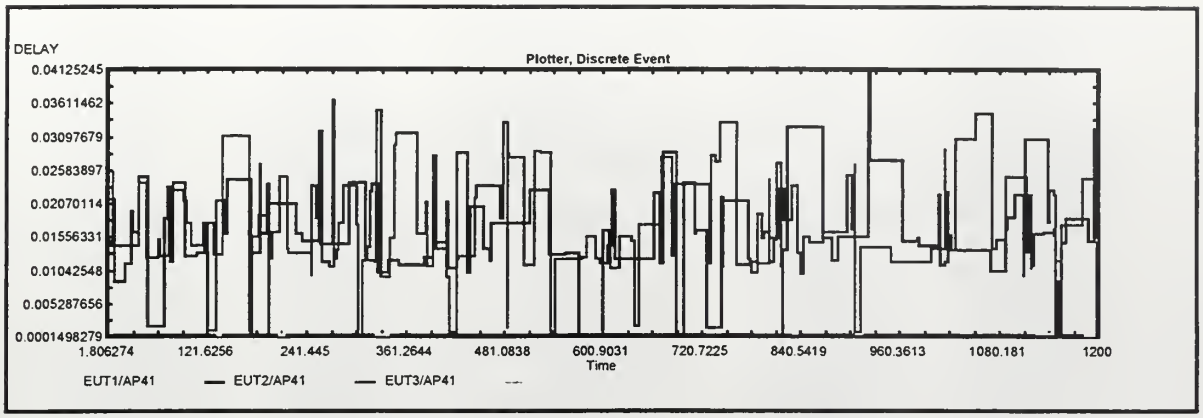
Run 1 AP 24



Run 1 AP 31



Run 1 AP 40


DELAY
Plotter, Discrete Event
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0.01556331
0.01042548
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1.806274
121.6256
241.445
361.2644
481.0838
600.9031
720.7225
840.5419
960.3613
1080.181
1200
Time
EUT1/AP41
EUT2/AP41
EUT3/AP41

Run 1 AP 41

Extend Dialog Report - 5/7/00 4:18:42 PM
Run #0

INFORMATION RUN 1 VTC W/AP 5 AT 200SEC AND AP1 AT 500 SEC, 2MB

Information **block number 629**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
951.16252	1.0000000	0.037713601	8.0000000	5.0000000
1001.1250	1.0000000	0.019880316	4.0000000	4.0000000
1016.4250	1.0000000	0.023719687	4.0000000	4.0000000
1017.2538	1.0000000	0.031106091	8.0000000	16.000000
1019.8500	1.0000000	0.019578555	4.0000000	5.0000000
1030.0875	1.0000000	0.019199094	4.0000000	4.0000000
1053.0250	1.0000000	0.023135073	4.0000000	4.0000000
1072.3563	1.0000000	0.023502625	7.0000000	4.0000000
1078.7250	1.0000000	0.023666154	4.0000000	4.0000000
1088.5750	1.0000000	0.029736206	8.0000000	5.0000000
1114.1500	1.0000000	0.01938544	4.0000000	5.0000000
1115.7000	1.0000000	0.020537915	7.0000000	5.0000000
1119.2500	1.0000000	0.020486258	4.0000000	4.0000000
1119.4413	1.0000000	0.024688784	4.0000000	16.000000
1124.5407	1.0000000	0.00036652962	4.0000000	1.0000000
1134.4875	1.0000000	0.023489416	4.0000000	5.0000000
1146.5479	1.0000000	0.00099519502	6.0000000	1.0000000
1147.2000	1.0000000	0.022840364	4.0000000	4.0000000
1148.3313	1.0000000	0.020436545	4.0000000	5.0000000
1156.7563	1.0000000	0.02098415	4.0000000	4.0000000
1182.2438	1.0000000	0.023062291	4.0000000	5.0000000

Information **block number 969**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
945.74377	1.0000000	0.024629545	4.0000000	5.0000000
949.96877	1.0000000	0.020570234	4.0000000	5.0000000
962.31877	1.0000000	0.02000621	4.0000000	4.0000000
966.38752	1.0000000	0.019698726	4.0000000	5.0000000
978.18752	1.0000000	0.0194543	4.0000000	5.0000000
999.11252	1.0000000	0.026126336	5.0000000	4.0000000
1023.6975	1.0000000	0.028491786	7.0000000	17.000000
1029.4875	1.0000000	0.020152668	4.0000000	5.0000000
1050.4500	1.0000000	0.02325019	6.0000000	4.0000000
1069.0563	1.0000000	0.024776078	5.0000000	5.0000000
1082.2250	1.0000000	0.020336747	4.0000000	5.0000000
1083.9375	1.0000000	0.018904322	4.0000000	5.0000000
1087.3688	1.0000000	0.024092596	4.0000000	4.0000000
1089.8750	1.0000000	0.019552746	5.0000000	5.0000000
1090.8438	1.0000000	0.021123871	6.0000000	5.0000000
1103.1625	1.0000000	0.023190068	4.0000000	4.0000000
1110.4063	1.0000000	0.02702888	8.0000000	5.0000000
1111.2938	1.0000000	0.018824078	8.0000000	5.0000000
1116.3313	1.0000000	0.024367099	4.0000000	5.0000000
1117.8438	1.0000000	0.019783293	4.0000000	4.0000000
1127.0375	1.0000000	0.023319375	4.0000000	4.0000000
1151.3625	1.0000000	0.018997253	4.0000000	4.0000000
1161.4000	1.0000000	0.024714715	4.0000000	5.0000000
1168.7501	1.0000000	0.00043280035	4.0000000	1.0000000
1185.0188	1.0000000	0.02419502	4.0000000	4.0000000
1185.0688	1.0000000	0.020209719	8.0000000	4.0000000
1196.1813	1.0000000	0.021263046	4.0000000	4.0000000

Information **block number 4915**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
1016.4275	1.0000000	0.026219687	4.0000000	31.000000
1017.2525	1.0000000	0.029856091	4.0000000	38.000000
1019.8588	1.0000000	0.028328555	4.0000000	36.000000
1030.0963	1.0000000	0.027949094	4.0000000	31.000000
1053.0275	1.0000000	0.025635073	4.0000000	31.000000
1072.3713	1.0000000	0.038502625	4.0000000	32.000000

1078.7275	1.0000000	0.026166154	5.0000000	34.000000
1088.5713	1.0000000	0.025986206	4.0000000	38.000000
1114.1588	1.0000000	0.02813544	7.0000000	37.000000
1115.7088	1.0000000	0.029287915	5.0000000	38.000000
1119.2713	1.0000000	0.041736258	4.0000000	32.000000
1119.4463	1.0000000	0.029688784	4.0000000	38.000000
1124.5418	1.0000000	0.0014600867	4.0000000	19.000000
1134.4900	1.0000000	0.025989416	5.0000000	34.000000
1146.5488	1.0000000	0.0018779954	7.0000000	19.000000
1147.1779	1.0000000	0.0007627801	7.0000000	19.000000
1148.3400	1.0000000	0.029186545	4.0000000	34.000000
1156.7838	1.0000000	0.04848415	5.0000000	32.000000
1182.2463	1.0000000	0.025562291	4.0000000	38.000000

Information **block number 7542**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
1117.4886	1.0000000	0.0018640223	6.0000000	5.0000000
1129.6438	1.0000000	0.014470277	5.0000000	22.000000
1137.5667	1.0000000	0.00096675955	5.0000000	4.0000000
1138.4266	1.0000000	0.00014297234	5.0000000	5.0000000
1139.7675	1.0000000	0.016236268	4.0000000	31.000000
1151.0860	1.0000000	0.00049491865	4.0000000	4.0000000
1160.9813	1.0000000	0.015291298	5.0000000	22.000000
1164.5375	1.0000000	0.01080235	5.0000000	22.000000

Information **block number 9086**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
1042.1588	1.0000000	0.00052403414	4.0000000	13.000000
1052.6750	1.0000000	0.013605192	4.0000000	14.000000
1069.3900	1.0000000	0.021518933	4.0000000	16.000000
1118.8644	1.0000000	0.0020169775	7.0000000	5.0000000
1138.8007	1.0000000	0.00062836551	5.0000000	13.000000
1156.3125	1.0000000	0.012161892	4.0000000	22.000000
1159.6463	1.0000000	0.024014305	5.0000000	17.000000
1175.2124	1.0000000	0.0012079266	6.0000000	5.0000000
1184.2850	1.0000000	0.0004197344	5.0000000	4.0000000

Information **block number 11085**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
971.26252	1.0000000	0.022848794	8.0000000	18.000000
973.32369	1.0000000	0.00093980596	5.0000000	12.000000
974.16877	1.0000000	0.0099278557	4.0000000	40.000000
977.74149	1.0000000	0.00016366606	4.0000000	4.0000000
1000.9763	1.0000000	0.0009540072	5.0000000	4.0000000
1005.9614	1.0000000	0.00011797554	4.0000000	5.0000000
1020.6750	1.0000000	0.010588423	4.0000000	40.000000
1035.8396	1.0000000	0.00032125973	4.0000000	5.0000000
1050.3246	1.0000000	0.00012341111	4.0000000	13.000000
1053.0500	1.0000000	0.0094445054	5.0000000	22.000000
1080.3309	1.0000000	0.00035134402	4.0000000	4.0000000
1111.1250	1.0000000	0.010994663	4.0000000	40.000000
1111.8988	1.0000000	0.013576156	4.0000000	31.000000
1119.2709	1.0000000	0.0098441891	8.0000000	5.0000000
1133.1500	1.0000000	0.011716576	4.0000000	40.000000
1137.0413	1.0000000	0.00030323876	4.0000000	12.000000
1150.4208	1.0000000	0.00075768286	5.0000000	4.0000000
1178.8999	1.0000000	0.000503223	4.0000000	5.0000000
1191.8438	1.0000000	0.01187032	4.0000000	14.000000
1195.0813	1.0000000	0.012720051	4.0000000	18.000000

Information **block number 17386**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
945.74627	1.0000000	0.027129545	4.0000000	18.000000
949.97127	1.0000000	0.023070234	4.0000000	18.000000
962.29900	1.0000000	0.00022955093	4.0000000	14.000000
966.39002	1.0000000	0.022198726	4.0000000	18.000000
978.19127	1.0000000	0.0232043	6.0000000	22.000000
999.09627	1.0000000	0.0098763355	5.0000000	5.0000000

1023.7063	1.0000000	0.037241786	4.0000000	40.000000
1029.4913	1.0000000	0.023902668	4.0000000	22.000000
1050.4272	1.0000000	0.00044913722	5.0000000	14.000000
1069.0613	1.0000000	0.029776078	4.0000000	31.000000
1082.2288	1.0000000	0.024086747	4.0000000	22.000000
1083.9413	1.0000000	0.022654322	4.0000000	22.000000
1087.3450	1.0000000	0.00031285227	4.0000000	14.000000
1089.8800	1.0000000	0.024552746	5.0000000	31.000000
1090.8475	1.0000000	0.024873871	5.0000000	22.000000
1103.1525	1.0000000	0.013190068	7.0000000	5.0000000
1110.4150	1.0000000	0.03577888	5.0000000	17.000000
1111.3213	1.0000000	0.046324078	5.0000000	17.000000
1116.3338	1.0000000	0.026867099	7.0000000	18.000000
1117.8242	1.0000000	0.00022225043	4.0000000	15.000000
1127.0156	1.0000000	0.0013471201	7.0000000	14.000000
1151.3775	1.0000000	0.033997253	4.0000000	16.000000
1161.4050	1.0000000	0.029714715	4.0000000	31.000000
1168.7638	1.0000000	0.014135394	4.0000000	4.0000000
1185.0088	1.0000000	0.01419502	5.0000000	5.0000000
1185.0493	1.0000000	0.000704058	5.0000000	14.000000
1196.1713	1.0000000	0.011263046	4.0000000	5.0000000

Information **block number 17880**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
1070.2750	1.0000000	0.018797183	4.0000000	22.000000
1089.3523	1.0000000	0.0001591018	4.0000000	4.0000000
1091.2563	1.0000000	0.0097236246	4.0000000	40.000000
1100.1063	1.0000000	0.0081328959	5.0000000	40.000000
1111.5750	1.0000000	0.013099962	4.0000000	40.000000
1111.8125	1.0000000	0.022385247	7.0000000	22.000000
1113.5563	1.0000000	0.00057555259	4.0000000	13.000000
1140.8577	1.0000000	0.00039233043	4.0000000	4.0000000
1141.7063	1.0000000	0.0088725788	5.0000000	40.000000
1148.1688	1.0000000	0.014424484	5.0000000	40.000000
1148.9750	1.0000000	0.0085354568	4.0000000	40.000000
1149.7045	1.0000000	0.0046844295	4.0000000	12.000000
1152.0250	1.0000000	0.024796483	5.0000000	22.000000
1153.7830	1.0000000	0.00026700475	4.0000000	12.000000
1156.4609	1.0000000	0.00027761416	4.0000000	4.0000000
1162.4948	1.0000000	0.00029969617	4.0000000	5.0000000
1189.2125	1.0000000	0.012274582	4.0000000	40.000000
1196.5625	1.0000000	0.014627812	5.0000000	18.000000

Information **block number 26376**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
949.98503	1.0000000	0.036824234	5.0000000	22.000000
962.30083	1.0000000	0.0020629389	4.0000000	10.000000
966.40378	1.0000000	0.035952726	4.0000000	22.000000
978.20503	1.0000000	0.0369583	4.0000000	31.000000
999.08802	1.0000000	0.0016192873	8.0000000	7.0000000
1023.7063	1.0000000	0.037241786	4.0000000	40.000000
1029.5050	1.0000000	0.037656668	5.0000000	31.000000
1050.4406	1.0000000	0.013856539	4.0000000	9.0000000
1069.0688	1.0000000	0.037276078	5.0000000	40.000000
1082.2413	1.0000000	0.036590747	4.0000000	22.000000
1083.9538	1.0000000	0.035158322	4.0000000	22.000000
1087.3458	1.0000000	0.001078296	4.0000000	9.0000000
1089.8925	1.0000000	0.037060746	5.0000000	31.000000
1090.8600	1.0000000	0.037377871	7.0000000	22.000000
1103.1481	1.0000000	0.0088058904	4.0000000	7.0000000
1110.4088	1.0000000	0.02952888	4.0000000	18.000000
1111.3025	1.0000000	0.027574078	6.0000000	18.000000
1116.3338	1.0000000	0.026867099	5.0000000	18.000000
1117.8475	1.0000000	0.023541293	7.0000000	12.000000
1127.0202	1.0000000	0.0060071999	4.0000000	9.0000000
1151.3550	1.0000000	0.011513253	4.0000000	13.000000
1161.4125	1.0000000	0.037214715	6.0000000	40.000000
1168.7504	1.0000000	0.00078826752	4.0000000	6.0000000
1184.9974	1.0000000	0.0027830541	6.0000000	7.0000000
1185.0499	1.0000000	0.0013743175	6.0000000	9.0000000

1196.1605	1.0000000	0.00045975885	4.0000000	7.0000000

Information **block number 38893**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
914.86002	1.0000000	0.013804318	6.0000000	26.000000
951.13627	1.0000000	0.011463601	4.0000000	27.000000
1001.1138	1.0000000	0.0086303158	7.0000000	22.000000
1016.4028	1.0000000	0.0015240583	7.0000000	24.000000
1017.2325	1.0000000	0.0098560906	5.0000000	29.000000
1019.8500	1.0000000	0.019578555	4.0000000	28.000000
1030.0689	1.0000000	0.00055724727	4.0000000	24.000000
1053.0035	1.0000000	0.0016560347	6.0000000	24.000000
1072.3463	1.0000000	0.013502625	5.0000000	25.000000
1078.7163	1.0000000	0.014916154	4.0000000	26.000000
1088.5638	1.0000000	0.018486206	7.0000000	29.000000
1114.1500	1.0000000	0.01938544	4.0000000	28.000000
1115.6888	1.0000000	0.009287915	5.0000000	29.000000
1119.2400	1.0000000	0.010486258	5.0000000	25.000000
1119.4275	1.0000000	0.010938784	4.0000000	30.000000
1124.5575	1.0000000	0.017184095	4.0000000	22.000000
1134.4800	1.0000000	0.015989416	4.0000000	27.000000
1146.5763	1.0000000	0.029330205	8.0000000	22.000000
1147.1950	1.0000000	0.017840364	8.0000000	22.000000
1148.3225	1.0000000	0.011686545	6.0000000	26.000000
1156.7463	1.0000000	0.01098415	4.0000000	25.000000
1182.2325	1.0000000	0.011812291	4.0000000	29.000000

Information **block number 43037**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
714.52127	1.0000000	0.013022651	7.0000000	4.0000000
718.77752	1.0000000	0.011509212	4.0000000	4.0000000
723.42756	1.0000000	0.0040437587	8.0000000	30.000000
724.09377	1.0000000	0.0119148	5.0000000	24.000000
725.03574	1.0000000	0.00014282236	4.0000000	29.000000
727.55730	1.0000000	0.00090127968	5.0000000	25.000000
730.66502	1.0000000	0.014713369	7.0000000	4.0000000
740.82611	1.0000000	0.00036734268	4.0000000	28.000000
758.57738	1.0000000	0.0060167417	8.0000000	29.000000
764.28502	1.0000000	0.041243963	5.0000000	40.000000
769.28502	1.0000000	0.01159624	4.0000000	5.0000000
773.82808	1.0000000	0.00025476568	4.0000000	22.000000
774.14389	1.0000000	0.00070778405	7.0000000	28.000000
797.17662	1.0000000	0.00099628242	6.0000000	22.000000
823.16912	1.0000000	0.00032301637	4.0000000	28.000000
824.17448	1.0000000	0.0047157025	8.0000000	29.000000
828.84300	1.0000000	0.0068616577	8.0000000	27.000000
829.62718	1.0000000	0.00040027171	4.0000000	28.000000
829.92400	1.0000000	0.00035192641	4.0000000	27.000000
843.52826	1.0000000	0.0035989053	8.0000000	29.000000
844.47554	1.0000000	0.00044823138	4.0000000	29.000000
860.06252	1.0000000	0.012221056	6.0000000	23.000000
869.79083	1.0000000	0.0017445132	7.0000000	22.000000
878.33801	1.0000000	9.3129912e-005	4.0000000	26.000000
879.21677	1.0000000	0.00096463971	6.0000000	27.000000
911.75566	1.0000000	6.0000000e-005	4.0000000	25.000000
925.44127	1.0000000	0.010292461	7.0000000	5.0000000
938.75877	1.0000000	0.024261217	5.0000000	31.000000
948.18791	1.0000000	0.0040530968	8.0000000	22.000000
976.82958	1.0000000	0.0018537346	6.0000000	30.000000
995.51002	1.0000000	0.040051766	4.0000000	40.000000
1013.4420	1.0000000	0.00034579588	4.0000000	28.000000
1015.6604	1.0000000	0.00082953631	5.0000000	29.000000
1027.0378	1.0000000	0.001672697	6.0000000	22.000000
1052.1938	1.0000000	0.013594577	8.0000000	23.000000
1063.5775	1.0000000	0.0090365572	4.0000000	4.0000000
1069.5609	1.0000000	6.0000000e-005	4.0000000	26.000000
1090.6600	1.0000000	0.038710794	5.0000000	40.000000
1131.2432	1.0000000	0.00075810367	5.0000000	22.000000
1132.5363	1.0000000	0.027780202	5.0000000	18.000000
1136.4988	1.0000000	0.041058576	8.0000000	18.000000

1151.2482	1.0000000	0.00039607776	4.0000000	26.000000
1191.3594	1.0000000	0.00076336722	5.0000000	30.000000

Information **block number 58438**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
1110.2397	1.0000000	0.00023660861	4.0000000	34.000000
1181.2538	1.0000000	0.026385033	4.0000000	40.000000
1199.2000	1.0000000	0.016872627	7.0000000	32.000000

Information **block number 69342**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
1070.2663	1.0000000	0.010047183	4.0000000	44.000000
1089.3688	1.0000000	0.016659086	4.0000000	40.000000
1091.2650	1.0000000	0.018473625	5.0000000	48.000000
1100.1200	1.0000000	0.021882896	4.0000000	47.000000
1111.5713	1.0000000	0.0093499622	4.0000000	48.000000
1111.8038	1.0000000	0.013635247	7.0000000	44.000000
1113.5863	1.0000000	0.030512171	5.0000000	42.000000
1140.8750	1.0000000	0.017705048	8.0000000	40.000000
1141.7200	1.0000000	0.022622579	5.0000000	47.000000
1148.1763	1.0000000	0.021924484	4.0000000	47.000000
1148.9775	1.0000000	0.011035457	4.0000000	48.000000
1149.7000	1.0000000	0.0001787039	4.0000000	41.000000
1152.0088	1.0000000	0.0085464827	5.0000000	43.000000
1153.7830	1.0000000	0.00029619691	4.0000000	41.000000
1156.4750	1.0000000	0.014392245	4.0000000	40.000000
1162.5125	1.0000000	0.01805089	7.0000000	40.000000
1189.2150	1.0000000	0.014774582	6.0000000	48.000000
1196.5800	1.0000000	0.032127812	5.0000000	42.000000

Information **block number 77152**

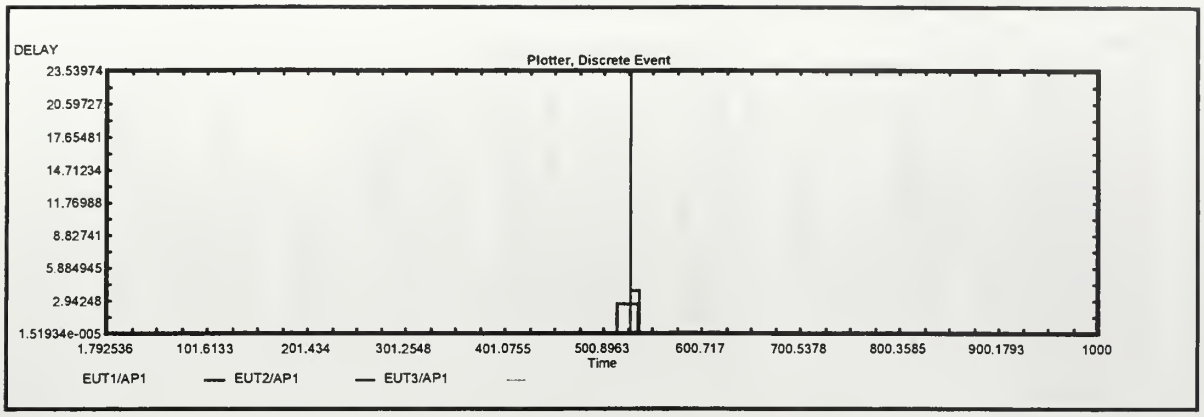
Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
1079.9000	1.0000000	0.033755942	4.0000000	22.000000
1091.9913	1.0000000	0.016132579	6.0000000	5.0000000
1092.9938	1.0000000	0.015686684	6.0000000	42.000000
1107.1120	1.0000000	0.0014803325	7.0000000	44.000000
1112.0430	1.0000000	0.00018369461	4.0000000	45.000000
1125.1850	1.0000000	0.01595985	7.0000000	5.0000000
1125.6729	1.0000000	0.00021522984	4.0000000	44.000000
1128.8638	1.0000000	0.0082065213	7.0000000	41.000000
1135.6743	1.0000000	0.0014718386	5.0000000	40.000000
1142.9788	1.0000000	0.00052243624	5.0000000	48.000000
1171.0121	1.0000000	0.021823023	5.0000000	41.000000
1171.5040	1.0000000	0.0017355344	7.0000000	46.000000

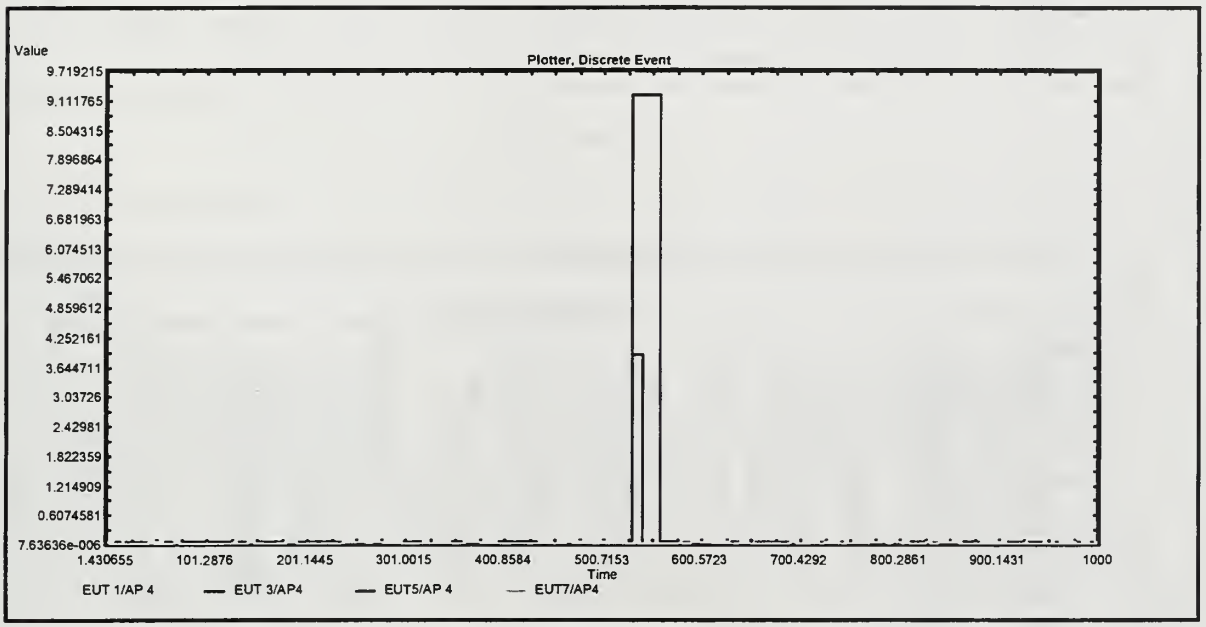
Information **block number 83021**

Input Parameters:

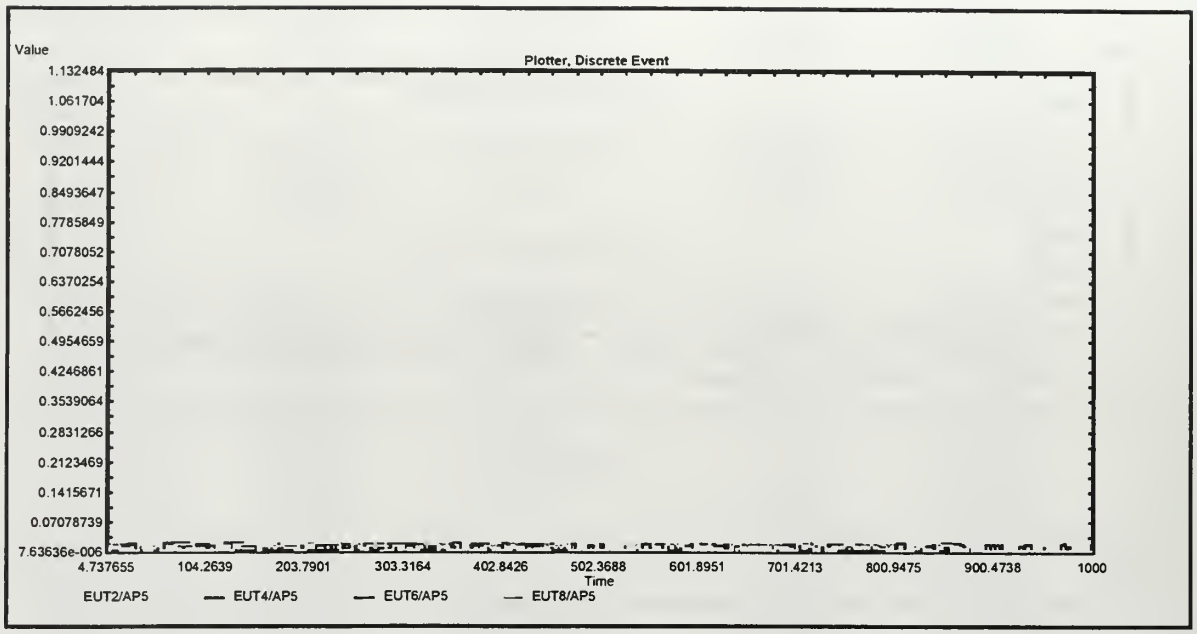
Arrival Time	Priority	time differe	COMMTYPE	OriginAP
1070.2675	1.0000000	0.011297183	4.0000000	5.0000000
1089.3800	1.0000000	0.027913086	4.0000000	4.0000000
1091.2471	1.0000000	0.00050926094	5.0000000	17.000000
1100.1011	1.0000000	0.0029136601	4.0000000	17.000000
1111.8050	1.0000000	0.014885247	4.0000000	5.0000000
1113.5675	1.0000000	0.011766171	4.0000000	5.0000000
1140.8863	1.0000000	0.028959048	4.0000000	4.0000000
1141.6989	1.0000000	0.0014986972	4.0000000	17.000000
1148.1556	1.0000000	0.0012189936	4.0000000	17.000000
1148.9671	1.0000000	0.00063110147	4.0000000	17.000000
1149.7238	1.0000000	0.023998101	4.0000000	4.0000000
1152.0238	1.0000000	0.023546483	5.0000000	5.0000000
1153.8113	1.0000000	0.028594636	4.0000000	4.0000000
1156.4863	1.0000000	0.025646245	4.0000000	4.0000000
1162.5238	1.0000000	0.02930489	4.0000000	4.0000000
1189.2013	1.0000000	0.0010341965	5.0000000	17.000000
1196.5675	1.0000000	0.019627812	5.0000000	5.0000000



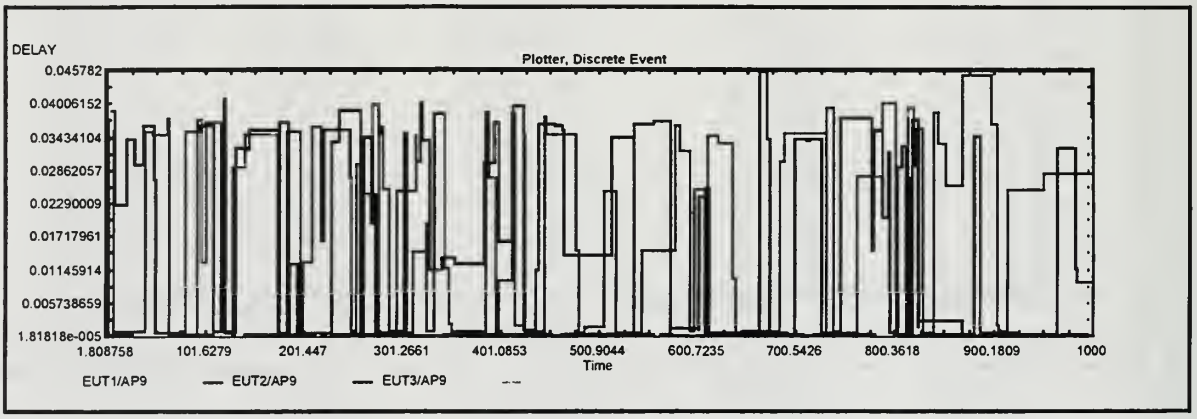
Run 2 AP 2



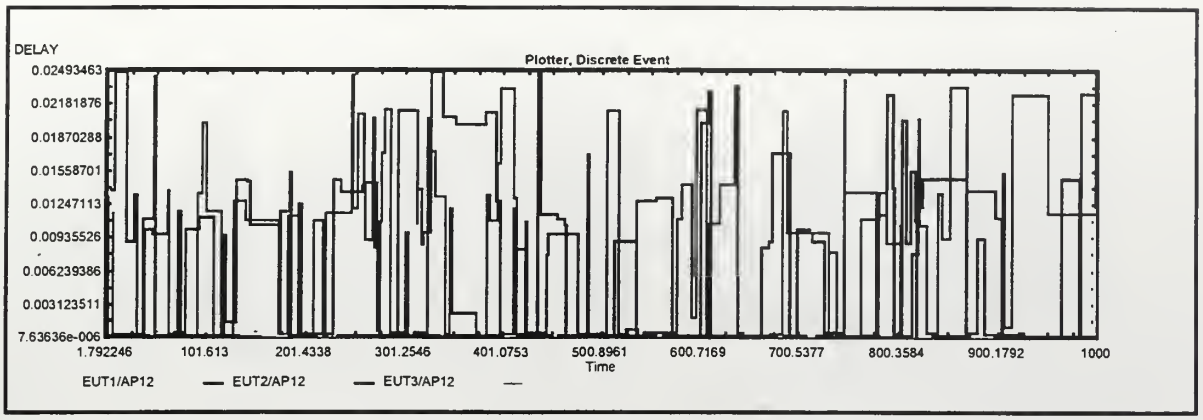
Run 2 AP 4



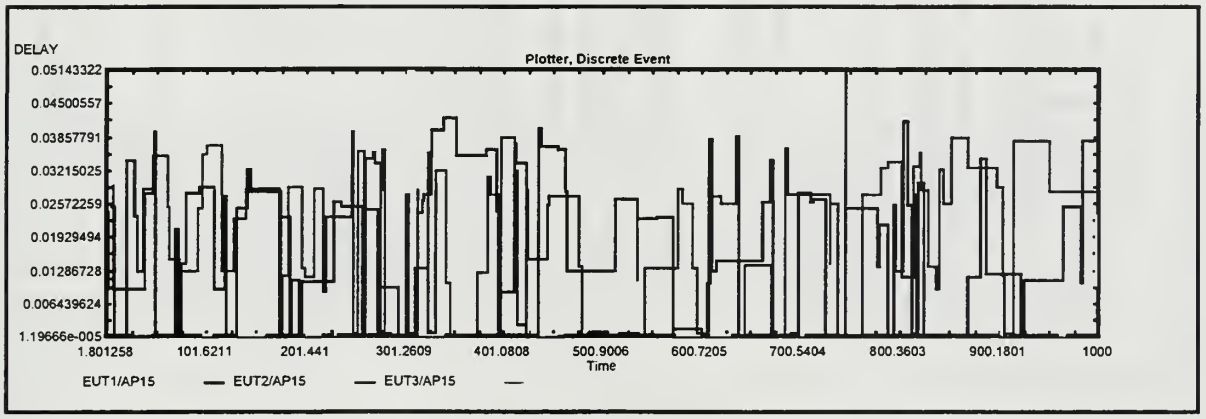
Run 2 AP 5



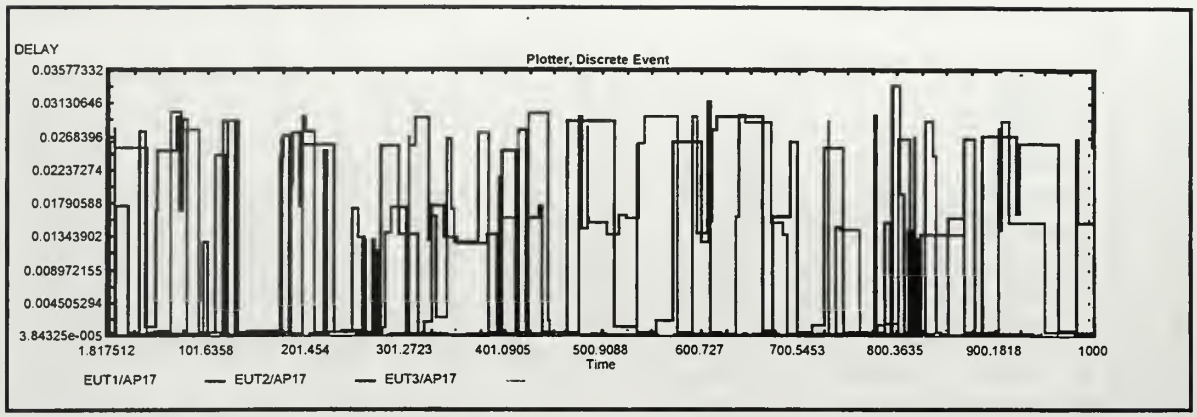
Run 2 AP 9



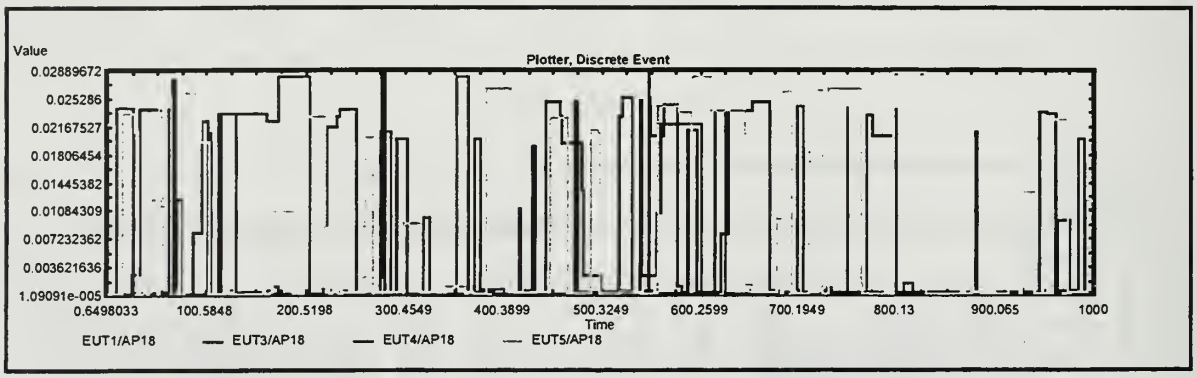
Run 2 AP 12



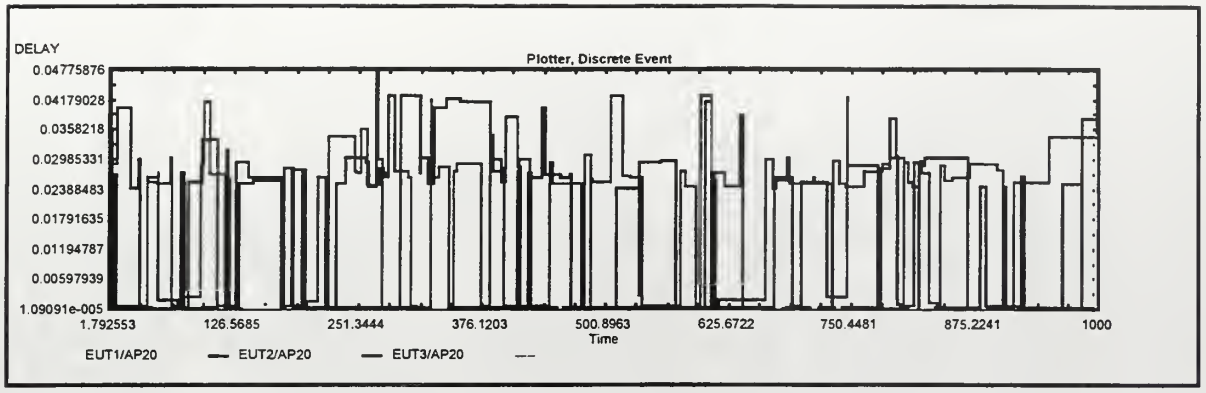
Run 2 AP 15



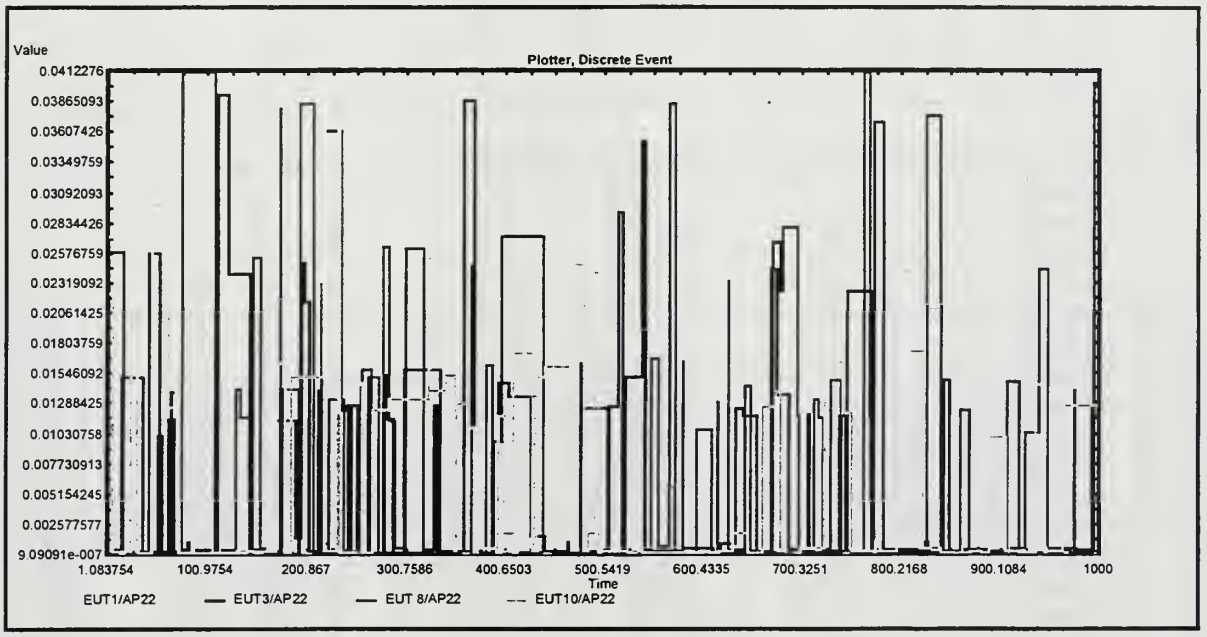
Run 2 AP 17



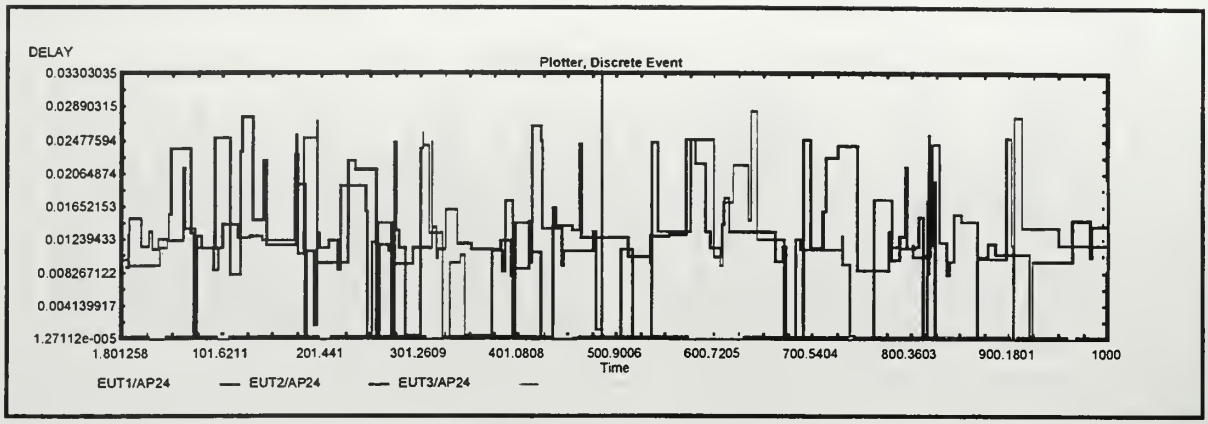
Run 2 AP 18



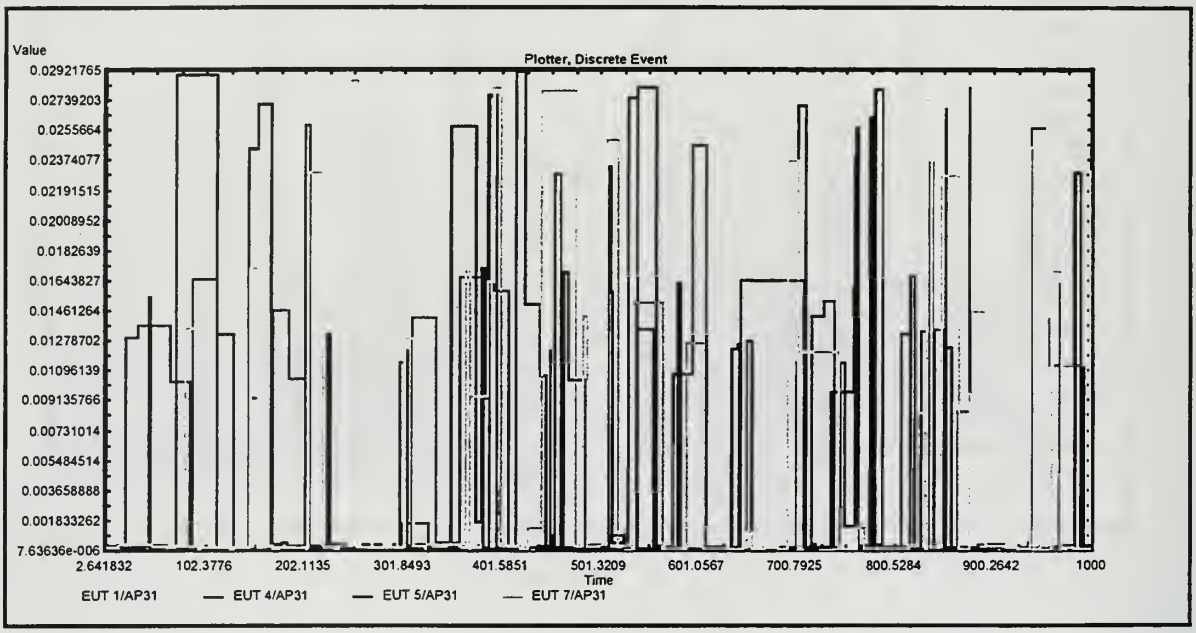
Run 2 AP 20



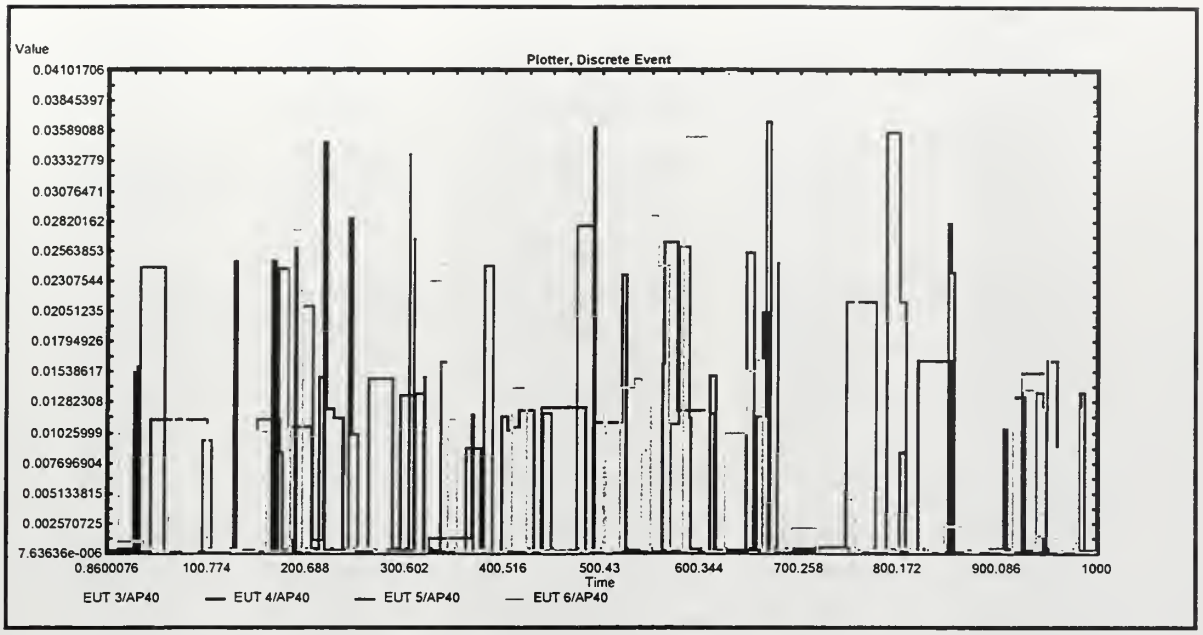
Run 2 AP 22



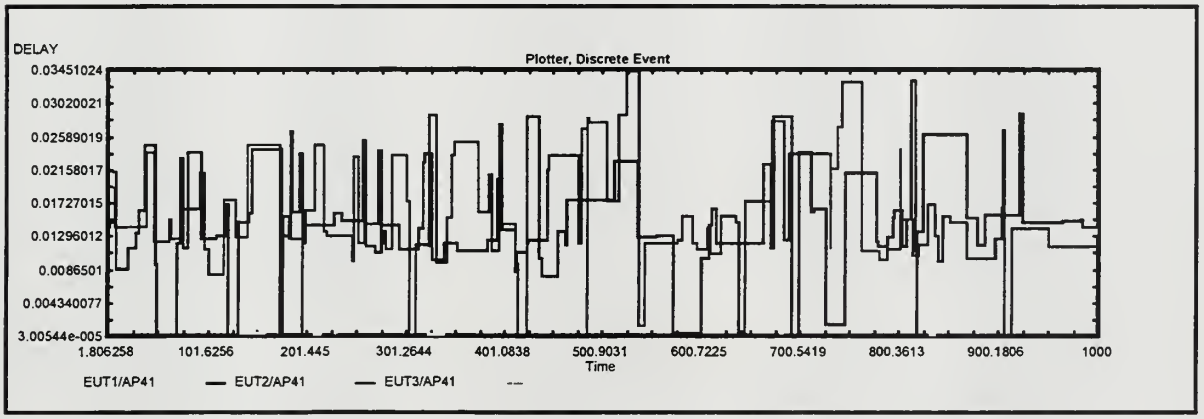
Run 2 AP 24



Run 2 AP 31



Run 2 AP 40



Run 2 AP 41

Extend Dialog Report - 5/8/00 1:29:09 PM
Run #0

INFORMATION RUN 2 VTC W/AP 1 AT 500 SEC. 11 MB

Information **block number 629**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
914.86876	1.0000000	0.022537955	7.0000000	4.0000000
951.14376	1.0000000	0.018947237	7.0000000	5.0000000

Information **block number 969**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
945.74376	1.0000000	0.024613182	5.0000000	5.0000000
949.98126	1.0000000	0.03305387	8.0000000	5.0000000
962.31876	1.0000000	0.019989846	4.0000000	4.0000000
966.38751	1.0000000	0.019682362	4.0000000	5.0000000
978.18751	1.0000000	0.019437936	4.0000000	5.0000000
999.10626	1.0000000	0.019859972	4.0000000	4.0000000

Information **block number 4915**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
914.87126	1.0000000	0.025037955	4.0000000	34.000000
951.15876	1.0000000	0.033947237	4.0000000	34.000000

Information **block number 7542**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
2.5400076	1.0000000	0.019215128	7.0000000	17.000000
5.5375076	1.0000000	0.011626694	5.0000000	40.000000
23.035363	1.0000000	2.5303444e-005	5.0000000	5.0000000
42.075008	1.0000000	0.014226987	4.0000000	40.000000
61.682035	1.0000000	0.00021178342	6.0000000	5.0000000
71.468758	1.0000000	0.02204454	4.0000000	18.000000
74.854708	1.0000000	6.5762407e-005	4.0000000	4.0000000
102.26340	1.0000000	0.00012590793	5.0000000	5.0000000
118.59376	1.0000000	0.014984101	7.0000000	40.000000
122.03787	1.0000000	7.7669449e-005	4.0000000	5.0000000
139.86251	1.0000000	0.011951884	7.0000000	14.000000
144.31501	1.0000000	0.022144944	5.0000000	17.000000
149.27974	1.0000000	0.00020873088	6.0000000	5.0000000
159.81251	1.0000000	0.014331968	4.0000000	22.000000
162.38751	1.0000000	0.01039508	4.0000000	40.000000
171.77392	1.0000000	7.7497635e-005	4.0000000	5.0000000
173.23751	1.0000000	0.011197477	4.0000000	22.000000
175.76167	1.0000000	0.00019509624	5.0000000	5.0000000
181.33126	1.0000000	0.021682357	5.0000000	18.000000
181.40251	1.0000000	0.027868891	8.0000000	16.000000
183.83126	1.0000000	0.023397315	6.0000000	18.000000
191.73126	1.0000000	0.015347429	5.0000000	14.000000
238.39376	1.0000000	0.015446074	8.0000000	22.000000
263.82786	1.0000000	0.00015648484	5.0000000	5.0000000
267.64001	1.0000000	0.02083031	5.0000000	17.000000
280.44108	1.0000000	8.2775329e-005	5.0000000	4.0000000
327.75899	1.0000000	7.6363637e-006	4.0000000	5.0000000
337.19985	1.0000000	5.5559074e-005	5.0000000	4.0000000
339.49171	1.0000000	7.1910182e-005	4.0000000	4.0000000
361.11876	1.0000000	0.015695189	8.0000000	40.000000
378.76005	1.0000000	9.1307656e-005	4.0000000	4.0000000
406.51123	1.0000000	8.4203954e-005	5.0000000	5.0000000
417.24376	1.0000000	0.014569377	5.0000000	14.000000
422.68126	1.0000000	0.013902489	4.0000000	40.000000
429.79319	1.0000000	3.6212302e-005	4.0000000	5.0000000
463.16251	1.0000000	0.023138935	4.0000000	18.000000
469.96445	1.0000000	0.00021438816	6.0000000	5.0000000
474.51876	1.0000000	0.011278092	4.0000000	22.000000
489.49671	1.0000000	0.00010602348	5.0000000	4.0000000
503.08154	1.0000000	0.0010038442	8.0000000	5.0000000
533.47382	1.0000000	7.6100455e-005	4.0000000	12.000000
537.04449	1.0000000	3.4479439e-005	4.0000000	5.0000000
557.47501	1.0000000	0.012613817	5.0000000	22.000000

581.62751	1.0000000	0.023209659	4.0000000	17.000000
611.99082	1.0000000	7.6363636e-006	6.0000000	4.0000000
648.45028	1.0000000	5.8990193e-005	4.0000000	5.0000000
660.10001	1.0000000	0.011781799	4.0000000	40.000000
660.23126	1.0000000	0.011794229	4.0000000	40.000000
662.78488	1.0000000	0.00018654103	5.0000000	4.0000000
677.89376	1.0000000	0.011289506	4.0000000	14.000000
686.34995	1.0000000	5.1928324e-005	4.0000000	5.0000000
690.06876	1.0000000	0.01483766	5.0000000	22.000000
691.01126	1.0000000	0.016823496	7.0000000	31.000000
697.17801	1.0000000	8.9132086e-005	4.0000000	13.000000
723.17497	1.0000000	0.0006282107	8.0000000	12.000000
724.15038	1.0000000	0.00020537548	5.0000000	5.0000000
726.10876	1.0000000	0.021535098	6.0000000	16.000000
727.29248	1.0000000	6.7908516e-005	4.0000000	5.0000000
742.46876	1.0000000	0.010696461	4.0000000	22.000000
747.35261	1.0000000	0.00010999538	5.0000000	4.0000000
770.34001	1.0000000	0.018962736	4.0000000	16.000000
775.99251	1.0000000	0.015947935	7.0000000	31.000000
788.73095	1.0000000	3.3389605e-005	4.0000000	12.000000
792.74626	1.0000000	0.02263513	7.0000000	17.000000
803.86853	1.0000000	7.6363636e-006	5.0000000	5.0000000
805.57501	1.0000000	0.011329941	7.0000000	40.000000
822.51751	1.0000000	0.014710045	7.0000000	31.000000
828.26876	1.0000000	0.021425475	4.0000000	18.000000
854.74376	1.0000000	0.015504346	4.0000000	22.000000
860.29630	1.0000000	7.7651548e-005	8.0000000	4.0000000
861.82739	1.0000000	6.6157229e-005	4.0000000	4.0000000
866.46251	1.0000000	0.01449824	4.0000000	22.000000
870.49376	1.0000000	0.011177187	6.0000000	40.000000
879.15095	1.0000000	0.00010324059	5.0000000	13.000000
905.11251	1.0000000	0.014018135	5.0000000	14.000000
905.81106	1.0000000	0.00014718116	5.0000000	12.000000
930.76362	1.0000000	0.00010322105	7.0000000	5.0000000
930.79275	1.0000000	5.8463604e-005	4.0000000	5.0000000
937.41328	1.0000000	0.0003098615	6.0000000	13.000000
941.97501	1.0000000	0.012904282	4.0000000	14.000000
944.40308	1.0000000	0.00015705002	6.0000000	5.0000000
946.42501	1.0000000	0.012001155	7.0000000	40.000000
946.94554	1.0000000	8.1329738e-005	4.0000000	5.0000000
953.86126	1.0000000	0.016578605	4.0000000	31.000000
956.19146	1.0000000	0.0002852892	5.0000000	13.000000
957.54876	1.0000000	0.013643649	7.0000000	31.000000
984.69376	1.0000000	0.01281317	5.0000000	14.000000
998.71501	1.0000000	0.024487388	5.0000000	16.000000
998.74376	1.0000000	0.0113100	8.0000000	40.000000
999.14372	1.0000000	0.00011577618	5.0000000	5.0000000

Information **block number 9086**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
1.4882672	1.0000000	1.1237529e-005	4.0000000	4.0000000
1.5937576	1.0000000	0.011275178	4.0000000	22.000000
22.127045	1.0000000	0.00013923432	7.0000000	12.000000
26.952508	1.0000000	0.023444017	6.0000000	17.000000
47.969888	1.0000000	5.1857951e-005	4.0000000	13.000000
48.552508	1.0000000	0.023072798	5.0000000	17.000000
65.877508	1.0000000	0.019183755	5.0000000	17.000000
66.100008	1.0000000	0.013014277	5.0000000	22.000000
66.108758	1.0000000	0.01991606	7.0000000	17.000000
76.406258	1.0000000	0.012978932	4.0000000	14.000000
82.498758	1.0000000	0.015206625	4.0000000	31.000000
85.021493	1.0000000	0.00021748863	7.0000000	12.000000
95.215008	1.0000000	0.019025078	5.0000000	16.000000
108.88728	1.0000000	7.3276289e-005	4.0000000	5.0000000
114.35906	1.0000000	8.8310872e-005	4.0000000	12.000000
114.77036	1.0000000	5.0400878e-005	4.0000000	4.0000000
126.71251	1.0000000	0.015611557	4.0000000	22.000000
132.14128	1.0000000	0.00027236874	5.0000000	5.0000000
146.99626	1.0000000	0.024960063	4.0000000	17.000000
165.08376	1.0000000	0.019388274	5.0000000	17.000000
188.23126	1.0000000	0.012924763	5.0000000	22.000000

206.98051	1.0000000	0.00025809302	6.0000000	4.0000000
208.05876	1.0000000	0.019488173	7.0000000	17.000000
236.17501	1.0000000	0.015571118	4.0000000	22.000000
236.78126	1.0000000	0.020514248	6.0000000	18.000000
245.74876	1.0000000	0.01628161	4.0000000	31.000000
252.55001	1.0000000	0.016243852	4.0000000	22.000000
252.88376	1.0000000	0.02017469	4.0000000	16.000000
269.84251	1.0000000	0.017350657	5.0000000	31.000000
276.50626	1.0000000	0.016183812	8.0000000	40.000000
281.26876	1.0000000	0.016016506	8.0000000	22.000000
291.39770	1.0000000	5.5406194e-005	4.0000000	13.000000
292.62501	1.0000000	0.016211879	4.0000000	40.000000
302.79784	1.0000000	8.1147494e-005	5.0000000	13.000000
303.23279	1.0000000	0.0019863723	8.0000000	5.0000000
318.63607	1.0000000	0.00034077871	5.0000000	5.0000000
366.59582	1.0000000	0.00019764548	6.0000000	5.0000000
369.68985	1.0000000	0.00021877317	5.0000000	5.0000000
396.96876	1.0000000	0.015140175	7.0000000	22.000000
423.28339	1.0000000	3.7434016e-005	4.0000000	5.0000000
440.98502	1.0000000	2.0825412e-005	4.0000000	5.0000000
448.53978	1.0000000	7.2934757e-005	7.0000000	5.0000000
454.60251	1.0000000	0.020224208	7.0000000	16.000000
465.74867	1.0000000	9.6922040e-005	4.0000000	5.0000000
467.43811	1.0000000	0.00022218714	5.0000000	5.0000000
472.84251	1.0000000	0.017367761	4.0000000	31.000000
501.76872	1.0000000	2.2183885e-005	4.0000000	4.0000000
508.13376	1.0000000	0.021223103	7.0000000	17.000000
513.38209	1.0000000	2.6016280e-005	4.0000000	5.0000000
515.35456	1.0000000	7.8635233e-005	4.0000000	13.000000
530.34061	1.0000000	7.7339028	6.0000000	5.0000000
530.34155	1.0000000	9.7192155	8.0000000	13.000000
530.34379	1.0000000	8.7357848	4.0000000	40.000000
541.51501	1.0000000	0.020349738	4.0000000	16.000000
547.31294	1.0000000	2.6361644e-005	4.0000000	5.0000000
578.89251	1.0000000	0.013464574	5.0000000	31.000000
584.05876	1.0000000	0.019809538	5.0000000	16.000000
584.41251	1.0000000	0.016867078	5.0000000	14.000000
586.73955	1.0000000	0.00018763823	7.0000000	4.0000000
587.23998	1.0000000	7.0479056e-005	4.0000000	5.0000000
589.22133	1.0000000	3.1044167e-005	4.0000000	4.0000000
608.89797	1.0000000	7.3116424e-005	4.0000000	4.0000000
626.63163	1.0000000	7.1289393e-005	4.0000000	5.0000000
627.07751	1.0000000	0.023921585	4.0000000	17.000000
628.25209	1.0000000	4.9853383e-005	4.0000000	5.0000000
628.97689	1.0000000	0.0003226059	6.0000000	4.0000000
636.83759	1.0000000	8.1276790e-005	4.0000000	13.000000
642.42501	1.0000000	0.024439297	4.0000000	18.000000
649.31070	1.0000000	4.7394412e-005	4.0000000	4.0000000
662.52751	1.0000000	0.024885328	4.0000000	16.000000
690.42274	1.0000000	0.00028683417	5.0000000	4.0000000
705.33348	1.0000000	0.00020321168	7.0000000	5.0000000
706.60501	1.0000000	0.012659853	4.0000000	31.000000
721.88126	1.0000000	0.0118153	7.0000000	40.000000
761.73751	1.0000000	0.015176328	5.0000000	14.000000
764.97126	1.0000000	0.022282601	8.0000000	16.000000
783.19001	1.0000000	0.023902392	6.0000000	16.000000
788.41215	1.0000000	4.6628975e-005	4.0000000	5.0000000
799.10001	1.0000000	0.011863807	4.0000000	22.000000
816.59376	1.0000000	0.011899344	4.0000000	40.000000
824.31319	1.0000000	9.1213772e-005	7.0000000	5.0000000
830.07599	1.0000000	0.00014422374	5.0000000	4.0000000
833.58024	1.0000000	0.00013169068	5.0000000	5.0000000
861.70251	1.0000000	0.021721326	4.0000000	17.000000
864.05001	1.0000000	0.013596812	4.0000000	40.000000
895.22182	1.0000000	6.4610565e-005	7.0000000	5.0000000
895.97126	1.0000000	0.02434128	4.0000000	16.000000
925.60626	1.0000000	0.020801608	5.0000000	18.000000
926.82808	1.0000000	1.8051588e-005	4.0000000	5.0000000
938.58168	1.0000000	5.6622550e-005	4.0000000	5.0000000
943.87146	1.0000000	5.7638167e-005	4.0000000	5.0000000
952.87806	1.0000000	0.00022885764	5.0000000	5.0000000
975.26501	1.0000000	0.022878166	7.0000000	17.000000

979.45251	1.0000000	0.020854658	4.0000000	17.000000
984.12501	1.0000000	0.013567707	7.0000000	40.000000

Information **block number 11085**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
971.25626	1.0000000	0.016582431	6.0000000	18.000000
973.32285	1.0000000	9.3205847e-005	4.0000000	12.000000
974.16876	1.0000000	0.0099114921	4.0000000	40.000000
977.74135	1.0000000	2.2520178e-005	7.0000000	4.0000000

Information **block number 15600**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
14.606805	1.0000000	3.0761535e-005	4.0000000	19.000000
25.902991	1.0000000	0.0025358652	8.0000000	20.000000
33.791258	1.0000000	0.023771451	7.0000000	40.000000
57.041385	1.0000000	0.00011484086	4.0000000	21.000000
63.593758	1.0000000	0.023810347	5.0000000	4.0000000
64.168439	1.0000000	0.00078944625	8.0000000	21.000000
72.176258	1.0000000	0.011967891	4.0000000	5.0000000
77.417277	1.0000000	4.8151613e-005	4.0000000	19.000000
87.701258	1.0000000	0.0079112923	6.0000000	5.0000000
96.920008	1.0000000	0.022175892	4.0000000	22.000000
102.70760	1.0000000	8.3970634e-005	4.0000000	21.000000
104.26876	1.0000000	0.020609258	6.0000000	4.0000000
106.20686	1.0000000	5.5141017e-005	4.0000000	19.000000
116.72126	1.0000000	0.023084471	5.0000000	31.000000
131.70069	1.0000000	0.00021822905	7.0000000	21.000000
155.28662	1.0000000	1.8912380e-005	4.0000000	21.000000
163.25668	1.0000000	0.00032636294	6.0000000	19.000000
167.53709	1.0000000	0.0010576991	8.0000000	21.000000
174.61156	1.0000000	0.00027010744	7.0000000	20.000000
177.10755	1.0000000	9.8273509e-005	5.0000000	20.000000
219.06659	1.0000000	0.00065775118	8.0000000	20.000000
221.73126	1.0000000	0.021387794	7.0000000	4.0000000
232.68126	1.0000000	0.022710295	5.0000000	4.0000000
235.98126	1.0000000	0.023700439	4.0000000	4.0000000
252.46328	1.0000000	1.1256833e-005	4.0000000	20.000000
265.61170	1.0000000	3.3222917e-005	4.0000000	19.000000
276.55657	1.0000000	0.0021628	8.0000000	20.000000
277.26626	1.0000000	0.028630894	7.0000000	40.000000
280.58723	1.0000000	4.7573658e-005	4.0000000	21.000000
293.81876	1.0000000	0.019980463	4.0000000	4.0000000
303.49371	1.0000000	6.1402802e-005	5.0000000	18.000000
321.81217	1.0000000	5.1446777e-005	4.0000000	20.000000
341.42861	1.0000000	5.9835285e-005	4.0000000	19.000000
369.94211	1.0000000	0.00017868906	5.0000000	19.000000
390.62237	1.0000000	6.3591088e-005	4.0000000	19.000000
422.36135	1.0000000	0.00030709516	6.0000000	20.000000
429.95626	1.0000000	0.018945234	6.0000000	4.0000000
433.38469	1.0000000	3.5700037e-005	4.0000000	18.000000
443.33251	1.0000000	0.024751208	4.0000000	22.000000
459.23876	1.0000000	0.022696257	6.0000000	22.000000
459.70626	1.0000000	0.01942737	5.0000000	4.0000000
481.52626	1.0000000	0.013171441	5.0000000	5.0000000
482.42957	1.0000000	0.0023914602	8.0000000	20.000000
501.38497	1.0000000	0.0002541669	5.0000000	19.000000
518.63175	1.0000000	0.00035027472	7.0000000	21.000000
529.89683	1.0000000	1.0909091e-005	5.0000000	19.000000
542.07682	1.0000000	7.3134462e-005	4.0000000	19.000000
546.27461	1.0000000	0.00030767583	5.0000000	20.000000
548.72251	1.0000000	0.028388084	4.0000000	40.000000
549.17126	1.0000000	0.02529337	4.0000000	31.000000
550.78126	1.0000000	0.020331328	5.0000000	4.0000000
563.82001	1.0000000	0.024300892	4.0000000	22.000000
578.24907	1.0000000	0.00096218604	8.0000000	21.000000
582.64802	1.0000000	0.00010789539	4.0000000	19.000000
588.26876	1.0000000	0.020972592	5.0000000	4.0000000
598.04092	1.0000000	0.00020908281	7.0000000	20.000000
621.00751	1.0000000	0.0075805429	4.0000000	5.0000000
628.98876	1.0000000	0.023610174	4.0000000	22.000000

652.84626	1.0000000	0.02465153	4.0000000	31.000000
671.33830	1.0000000	0.0003104488	5.0000000	20.000000
681.25680	1.0000000	0.00025848903	5.0000000	19.000000
698.26891	1.0000000	8.5884648e-005	5.0000000	19.000000
717.39296	1.0000000	1.3403033e-005	4.0000000	21.000000
723.24944	1.0000000	2.7084539e-005	4.0000000	19.000000
724.47010	1.0000000	5.1879957e-005	5.0000000	19.000000
728.89579	1.0000000	0.000102267	4.0000000	20.000000
730.41741	1.0000000	0.00078207961	8.0000000	20.000000
734.36652	1.0000000	0.0002889686	7.0000000	21.000000
751.74501	1.0000000	0.023869611	6.0000000	22.000000
751.92412	1.0000000	9.2899172e-005	4.0000000	21.000000
762.96113	1.0000000	1.0909091e-005	4.0000000	20.000000
763.75522	1.0000000	0.00019129486	5.0000000	21.000000
771.18251	1.0000000	0.022958701	7.0000000	22.000000
776.87501	1.0000000	0.020199558	5.0000000	4.0000000
800.72501	1.0000000	0.023716917	6.0000000	4.0000000
801.15248	1.0000000	0.00014844649	6.0000000	19.000000
847.89195	1.0000000	0.00022381992	5.0000000	19.000000
871.49180	1.0000000	4.5005600e-005	4.0000000	19.000000
909.53071	1.0000000	6.6916577e-005	4.0000000	20.000000
914.32900	1.0000000	3.6869779e-005	4.0000000	21.000000
914.90608	1.0000000	0.00015622982	5.0000000	21.000000
925.67407	1.0000000	0.00064701156	8.0000000	20.000000
928.99696	1.0000000	0.00027835636	5.0000000	19.000000
945.89376	1.0000000	0.023366105	8.0000000	4.0000000
954.00001	1.0000000	0.02310215	5.0000000	4.0000000
961.76096	1.0000000	0.0003989312	6.0000000	18.000000
964.39501	1.0000000	0.0093833581	7.0000000	5.0000000
975.61047	1.0000000	0.00028311362	7.0000000	21.000000
993.19180	1.0000000	0.0002490125	5.0000000	21.000000
996.68459	1.0000000	7.3990530e-005	4.0000000	18.000000
996.72501	1.0000000	0.00020739931	5.0000000	21.000000

Information **block number 17386**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
945.74626	1.0000000	0.027113182	6.0000000	18.000000
949.97126	1.0000000	0.02305387	7.0000000	18.000000
962.29883	1.0000000	6.0191390e-005	4.0000000	14.000000
966.39001	1.0000000	0.022182362	5.0000000	18.000000
978.19126	1.0000000	0.023187936	4.0000000	22.000000
999.09626	1.0000000	0.0098599719	4.0000000	5.0000000

Information **block number 17880**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
7.3312576	1.0000000	0.013660563	4.0000000	40.000000
10.212508	1.0000000	0.024783295	7.0000000	22.000000
23.325008	1.0000000	0.0088078356	4.0000000	40.000000
30.530008	1.0000000	0.013138131	4.0000000	31.000000
33.371518	1.0000000	5.5208983e-005	4.0000000	5.0000000
39.843758	1.0000000	0.010930011	4.0000000	40.000000
50.468758	1.0000000	0.024185992	7.0000000	22.000000
51.480286	1.0000000	7.6195078e-005	4.0000000	12.000000
71.450904	1.0000000	0.00022481282	6.0000000	5.0000000
74.337508	1.0000000	0.011699903	4.0000000	18.000000
77.207632	1.0000000	0.00021953462	6.0000000	5.0000000
81.331258	1.0000000	0.0099835877	4.0000000	40.000000
96.092508	1.0000000	0.011083225	4.0000000	31.000000
110.71847	1.0000000	6.4537646e-005	4.0000000	5.0000000
120.53001	1.0000000	0.0088973526	5.0000000	31.000000
121.40501	1.0000000	0.0093916721	4.0000000	31.000000
122.98366	1.0000000	0.0012000745	8.0000000	12.000000
133.48626	1.0000000	0.01459633	5.0000000	31.000000
143.53626	1.0000000	0.014501098	4.0000000	31.000000
146.68126	1.0000000	0.010310124	7.0000000	40.000000
176.58495	1.0000000	0.00011576049	5.0000000	12.000000
177.63626	1.0000000	0.011563379	7.0000000	31.000000
186.66251	1.0000000	0.015210378	4.0000000	18.000000
187.22168	1.0000000	1.0909091e-005	4.0000000	4.0000000
195.56251	1.0000000	0.012304253	4.0000000	18.000000

198.48317	1.0000000	5.6737231e-005	4.0000000	12.000000
198.51720	1.0000000	0.00018638548	6.0000000	5.0000000
229.78001	1.0000000	0.014536803	8.0000000	31.000000
238.35501	1.0000000	0.013503305	4.0000000	31.000000
258.61876	1.0000000	0.013974516	5.0000000	18.000000
261.39376	1.0000000	0.0090324926	4.0000000	40.000000
269.09376	1.0000000	0.020258758	5.0000000	22.000000
271.26251	1.0000000	0.0082754269	6.0000000	40.000000
276.67968	1.0000000	5.0009485e-005	4.0000000	4.0000000
294.98751	1.0000000	0.021073575	8.0000000	22.000000
314.16126	1.0000000	0.010563013	4.0000000	31.000000
314.98001	1.0000000	0.013691477	7.0000000	31.000000
319.25001	1.0000000	0.0085824493	4.0000000	40.000000
321.42501	1.0000000	0.0097396292	4.0000000	40.000000
328.30626	1.0000000	0.024724301	4.0000000	22.000000
340.99376	1.0000000	0.020513609	6.0000000	22.000000
354.23751	1.0000000	0.019690434	4.0000000	22.000000
384.99376	1.0000000	0.020903898	4.0000000	22.000000
395.51876	1.0000000	0.012660424	7.0000000	40.000000
399.17413	1.0000000	0.00014029956	5.0000000	4.0000000
412.56251	1.0000000	0.011947286	8.0000000	40.000000
414.60626	1.0000000	0.0081204038	4.0000000	40.000000
425.13310	1.0000000	6.4418324e-005	4.0000000	13.000000
437.18126	1.0000000	0.024821515	4.0000000	22.000000
441.03126	1.0000000	0.011356698	6.0000000	40.000000
456.63126	1.0000000	0.010936728	4.0000000	40.000000
464.78001	1.0000000	0.01032381	6.0000000	31.000000
466.47006	1.0000000	1.3559718e-005	4.0000000	4.0000000
513.88751	1.0000000	0.0088376157	5.0000000	40.000000
536.74830	1.0000000	0.00013275271	7.0000000	5.0000000
537.03001	1.0000000	0.01255086	4.0000000	31.000000
557.44251	1.0000000	0.012903291	5.0000000	31.000000
573.58582	1.0000000	0.00045203744	7.0000000	12.000000
573.75410	1.0000000	1.5662954e-005	4.0000000	12.000000
601.96876	1.0000000	0.019939701	5.0000000	22.000000
609.28126	1.0000000	0.022841453	5.0000000	22.000000
613.24637	1.0000000	7.1933540e-005	4.0000000	5.0000000
616.70060	1.0000000	7.6363636e-006	5.0000000	5.0000000
664.02501	1.0000000	0.008281996	4.0000000	40.000000
671.86251	1.0000000	0.0087714766	4.0000000	40.000000
675.18126	1.0000000	0.017065586	7.0000000	18.000000
692.57906	1.0000000	6.5343174e-005	4.0000000	12.000000
700.95001	1.0000000	0.0099277449	5.0000000	40.000000
712.83001	1.0000000	0.0096117967	6.0000000	31.000000
715.39251	1.0000000	0.0087835623	5.0000000	31.000000
727.11759	1.0000000	0.00029853095	4.0000000	12.000000
746.93126	1.0000000	0.023933222	4.0000000	22.000000
747.30626	1.0000000	0.020704865	6.0000000	22.000000
747.95626	1.0000000	0.013428438	6.0000000	40.000000
778.63810	1.0000000	7.9841310e-005	4.0000000	4.0000000
780.76126	1.0000000	0.011369586	4.0000000	31.000000
790.41876	1.0000000	0.022595717	7.0000000	22.000000
795.93626	1.0000000	0.013805411	7.0000000	31.000000
797.66536	1.0000000	0.00017224545	6.0000000	5.0000000
804.56876	1.0000000	0.020159083	4.0000000	22.000000
809.34876	1.0000000	0.0087594565	6.0000000	31.000000
813.46876	1.0000000	0.01539137	8.0000000	18.000000
819.10501	1.0000000	0.010840034	4.0000000	31.000000
820.36209	1.0000000	7.6363636e-006	4.0000000	4.0000000
820.42272	1.0000000	0.00049346689	6.0000000	12.000000
820.46126	1.0000000	0.012052694	6.0000000	31.000000
826.23126	1.0000000	0.014706135	4.0000000	18.000000
869.30389	1.0000000	0.00025608507	5.0000000	5.0000000
881.26251	1.0000000	0.0091184662	6.0000000	40.000000
887.39716	1.0000000	0.0001153475	5.0000000	5.0000000
923.42659	1.0000000	0.00031553414	5.0000000	13.000000
926.22300	1.0000000	2.6580178e-005	7.0000000	5.0000000
965.27376	1.0000000	0.014745477	7.0000000	31.000000
984.01645	1.0000000	0.00022947611	5.0000000	4.0000000
985.27501	1.0000000	0.022691202	5.0000000	22.000000

Information **block number 26376**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
943.26251	1.0000000	0.034359887	4.0000000	40.000000
945.75376	1.0000000	0.034617182	4.0000000	22.000000
949.98501	1.0000000	0.03680787	6.0000000	22.000000
962.29903	1.0000000	0.00025917755	4.0000000	10.000000
966.40376	1.0000000	0.035936362	4.0000000	22.000000
978.20501	1.0000000	0.036941936	4.0000000	31.000000
999.08676	1.0000000	0.00036480253	6.0000000	7.0000000
999.08695	1.0000000	0.00055281421	7.0000000	7.0000000

Information **block number 38893**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
914.86001	1.0000000	0.013787955	4.0000000	26.000000
951.13626	1.0000000	0.011447237	5.0000000	27.000000

Information **block number 43037**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
730.66501	1.0000000	0.014697005	5.0000000	4.0000000
740.82589	1.0000000	0.000151446	5.0000000	28.000000
758.57137	1.0000000	1.0909091e-005	7.0000000	29.000000
764.28501	1.0000000	0.041227599	4.0000000	40.000000
769.28501	1.0000000	0.011579876	5.0000000	5.0000000
773.82801	1.0000000	0.00018705505	5.0000000	22.000000
774.14332	1.0000000	0.00014265855	5.0000000	28.000000
797.17564	1.0000000	1.3327146e-005	4.0000000	22.000000
823.16884	1.0000000	4.1349191e-005	7.0000000	28.000000
824.17063	1.0000000	0.00085859388	8.0000000	29.000000
828.83616	1.0000000	2.7845479e-005	7.0000000	27.000000
829.62687	1.0000000	8.4570213e-005	4.0000000	28.000000
829.92405	1.0000000	0.00040018177	6.0000000	27.000000
843.52470	1.0000000	4.6189065e-005	4.0000000	29.000000
844.47520	1.0000000	0.00010687206	5.0000000	29.000000
860.06251	1.0000000	0.012204692	4.0000000	23.000000
869.78937	1.0000000	0.0002782081	6.0000000	22.000000
878.33825	1.0000000	0.00032717487	6.0000000	26.000000
879.21589	1.0000000	7.8317677e-005	5.0000000	27.000000
911.75593	1.0000000	0.00032463804	6.0000000	25.000000
925.44126	1.0000000	0.010276098	7.0000000	5.0000000
938.75876	1.0000000	0.024244853	4.0000000	31.000000
948.18421	1.0000000	0.00034390275	7.0000000	22.000000
976.82796	1.0000000	0.0002312424	7.0000000	30.000000
995.51001	1.0000000	0.040035402	8.0000000	40.000000

Information **block number 58438**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
12.648779	1.0000000	4.8693263e-005	4.0000000	37.000000
23.606258	1.0000000	0.012861629	4.0000000	33.000000
36.631258	1.0000000	0.013589287	7.0000000	32.000000
67.676258	1.0000000	0.010182809	4.0000000	5.0000000
86.778771	1.0000000	0.00023759739	5.0000000	38.000000
90.606258	1.0000000	0.016387474	4.0000000	33.000000
114.04738	1.0000000	0.00012017554	6.0000000	35.000000
135.14701	1.0000000	5.2603196e-005	4.0000000	34.000000
146.91376	1.0000000	0.0091892433	4.0000000	5.0000000
155.51286	1.0000000	0.00011893185	5.0000000	39.000000
157.24438	1.0000000	6.3003409e-005	4.0000000	37.000000
170.26876	1.0000000	0.014505365	6.0000000	32.000000
187.33126	1.0000000	0.010309015	4.0000000	4.0000000
203.36815	1.0000000	0.00022897118	7.0000000	36.000000
204.34001	1.0000000	0.025775842	4.0000000	22.000000
207.78202	1.0000000	0.00022497159	7.0000000	35.000000
224.35761	1.0000000	7.2648109e-005	4.0000000	35.000000
225.79376	1.0000000	0.013041937	8.0000000	33.000000
229.93873	1.0000000	0.00027297188	7.0000000	36.000000
245.36278	1.0000000	6.7579412e-005	4.0000000	36.000000
262.40342	1.0000000	0.00031687817	5.0000000	37.000000
268.25607	1.0000000	4.6827832e-005	4.0000000	37.000000

299.12626	1.0000000	0.011374908	5.0000000	5.0000000
303.76876	1.0000000	0.012074037	5.0000000	33.000000
307.03558	1.0000000	0.00019575456	5.0000000	35.000000
311.30001	1.0000000	0.014066173	5.0000000	32.000000
334.67828	1.0000000	0.00035587797	6.0000000	37.000000
356.51732	1.0000000	5.7235712e-005	4.0000000	37.000000
358.55001	1.0000000	0.016494595	4.0000000	32.000000
382.82945	1.0000000	5.3540825e-005	4.0000000	37.000000
389.25876	1.0000000	0.027476294	5.0000000	22.000000
393.61876	1.0000000	0.01565747	4.0000000	33.000000
408.39943	1.0000000	4.9123912e-005	4.0000000	34.000000
427.98971	1.0000000	9.2307135e-005	4.0000000	31.000000
439.68113	1.0000000	0.00018918981	7.0000000	39.000000
451.60650	1.0000000	0.01203648	4.0000000	4.0000000
451.77340	1.0000000	0.00078203026	8.0000000	31.000000
455.17267	1.0000000	0.00024101533	5.0000000	31.000000
455.55751	1.0000000	0.022806881	4.0000000	18.000000
462.18359	1.0000000	3.9051009e-005	4.0000000	31.000000
464.75951	1.0000000	0.00011357286	5.0000000	34.000000
477.41351	1.0000000	2.2920272e-005	4.0000000	36.000000
503.72705	1.0000000	4.9333856e-005	4.0000000	31.000000
503.77907	1.0000000	5.7676571e-005	4.0000000	36.000000
511.63250	1.0000000	0.00084268144	8.0000000	31.000000
526.72611	1.0000000	0.00021107929	5.0000000	37.000000
531.06501	1.0000000	0.027436014	4.0000000	22.000000
540.73751	1.0000000	0.013365174	4.0000000	32.000000
557.60713	1.0000000	0.00022935277	6.0000000	38.000000
564.02250	1.0000000	4.9351094e-005	4.0000000	37.000000
565.40775	1.0000000	3.8488428e-005	4.0000000	38.000000
565.95001	1.0000000	0.011989743	6.0000000	33.000000
566.80530	1.0000000	3.8571227e-005	4.0000000	37.000000
576.78876	1.0000000	0.010656433	4.0000000	5.0000000
596.22126	1.0000000	0.024540818	8.0000000	22.000000
609.88412	1.0000000	8.8192073e-005	5.0000000	39.000000
613.54839	1.0000000	0.00011731507	5.0000000	35.000000
616.76091	1.0000000	6.6999422e-005	4.0000000	37.000000
626.90286	1.0000000	7.4789639e-005	4.0000000	35.000000
638.31691	1.0000000	6.3144998e-005	4.0000000	35.000000
645.44376	1.0000000	0.016374789	6.0000000	33.000000
709.59703	1.0000000	6.0184352e-005	5.0000000	35.000000
715.33883	1.0000000	0.00019945625	5.0000000	35.000000
718.01251	1.0000000	0.014172386	4.0000000	32.000000
729.70001	1.0000000	0.015047066	4.0000000	32.000000
740.60931	1.0000000	0.00012313047	5.0000000	38.000000
745.87501	1.0000000	0.011350565	5.0000000	33.000000
750.65106	1.0000000	0.0013494785	8.0000000	37.000000
761.24001	1.0000000	0.023791347	5.0000000	22.000000
763.45112	1.0000000	0.00019898023	6.0000000	37.000000
769.07765	1.0000000	0.00018200877	5.0000000	35.000000
777.16728	1.0000000	0.00025994857	6.0000000	35.000000
781.08049	1.0000000	0.00023753069	6.0000000	39.000000
784.74758	1.0000000	6.3296136e-005	4.0000000	36.000000
816.71251	1.0000000	0.016647137	5.0000000	32.000000
822.23377	1.0000000	1.0909091e-005	6.0000000	34.000000
836.53876	1.0000000	0.023512164	7.0000000	18.000000
840.46251	1.0000000	0.013351667	5.0000000	4.0000000
851.85350	1.0000000	3.8520385e-005	4.0000000	31.000000
856.24702	1.0000000	6.2533618e-005	4.0000000	39.000000
865.73126	1.0000000	0.0083223611	7.0000000	4.0000000
877.69001	1.0000000	0.028028358	4.0000000	22.000000
878.13581	1.0000000	9.4547780e-005	4.0000000	37.000000
886.78296	1.0000000	0.00025493615	6.0000000	39.000000
912.10246	1.0000000	0.00014156236	6.0000000	39.000000
936.83003	1.0000000	0.00037902543	6.0000000	37.000000
940.26376	1.0000000	0.025545335	5.0000000	18.000000
955.96251	1.0000000	0.011147519	4.0000000	4.0000000
991.96633	1.0000000	1.0909091e-005	8.0000000	35.000000

Information **block number 69342**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
7.3387576	1.0000000	0.021160563	6.0000000	47.000000
10.196258	1.0000000	0.0085332952	5.0000000	43.000000
23.327508	1.0000000	0.011307836	4.0000000	48.000000
30.530008	1.0000000	0.013138131	4.0000000	45.000000
33.387508	1.0000000	0.016045231	4.0000000	40.000000
39.857508	1.0000000	0.024680011	4.0000000	47.000000
50.453758	1.0000000	0.0091859917	5.0000000	44.000000
51.480255	1.0000000	4.5013929e-005	4.0000000	41.000000
71.462508	1.0000000	0.01182835	4.0000000	40.000000
74.348758	1.0000000	0.022949903	5.0000000	42.000000
77.218758	1.0000000	0.011344672	4.0000000	40.000000
81.345008	1.0000000	0.023733588	5.0000000	47.000000
96.093758	1.0000000	0.012333225	5.0000000	46.000000
110.73126	1.0000000	0.012853648	4.0000000	40.000000
120.53751	1.0000000	0.016397353	8.0000000	46.000000
121.41251	1.0000000	0.016891672	5.0000000	46.000000
122.98257	1.0000000	0.00011113866	5.0000000	41.000000
133.48626	1.0000000	0.01459633	4.0000000	45.000000
143.53751	1.0000000	0.015751098	5.0000000	46.000000
146.69501	1.0000000	0.024060124	7.0000000	47.000000
176.58491	1.0000000	7.6258776e-005	4.0000000	41.000000
177.63751	1.0000000	0.012813379	4.0000000	46.000000
186.67376	1.0000000	0.026460378	7.0000000	42.000000
187.23751	1.0000000	0.015835672	4.0000000	40.000000
195.57376	1.0000000	0.023554253	4.0000000	42.000000
198.48334	1.0000000	0.00022229966	7.0000000	41.000000
198.53126	1.0000000	0.014243521	7.0000000	40.000000
229.78126	1.0000000	0.015786803	4.0000000	46.000000
238.35626	1.0000000	0.014753305	5.0000000	46.000000
258.63001	1.0000000	0.025224516	4.0000000	42.000000
261.39626	1.0000000	0.011532493	5.0000000	48.000000
269.08501	1.0000000	0.011508758	7.0000000	44.000000
271.26501	1.0000000	0.010775427	4.0000000	48.000000
276.69376	1.0000000	0.014124605	7.0000000	40.000000
294.97751	1.0000000	0.011073575	4.0000000	43.000000
314.16251	1.0000000	0.011813013	4.0000000	46.000000
314.98001	1.0000000	0.013691477	4.0000000	45.000000
319.26376	1.0000000	0.022332449	4.0000000	47.000000
321.43876	1.0000000	0.023489629	5.0000000	47.000000
328.29126	1.0000000	0.0097243008	7.0000000	44.000000
340.98501	1.0000000	0.011763609	4.0000000	44.000000
354.22876	1.0000000	0.010940434	4.0000000	44.000000
384.98501	1.0000000	0.012153898	5.0000000	44.000000
395.52626	1.0000000	0.020160424	4.0000000	47.000000
399.18751	1.0000000	0.01351857	6.0000000	40.000000
412.55876	1.0000000	0.0081972858	5.0000000	48.000000
414.60876	1.0000000	0.010620404	4.0000000	48.000000
425.16126	1.0000000	0.028218202	7.0000000	42.000000
437.16626	1.0000000	0.0098215147	5.0000000	44.000000
441.02751	1.0000000	0.0076066983	5.0000000	48.000000
456.63376	1.0000000	0.013436728	4.0000000	48.000000
464.78126	1.0000000	0.01157381	7.0000000	46.000000
466.48751	1.0000000	0.017456743	4.0000000	40.000000
513.90126	1.0000000	0.022587616	4.0000000	47.000000
536.76251	1.0000000	0.014341519	5.0000000	40.000000
537.03001	1.0000000	0.01255086	4.0000000	45.000000
557.44251	1.0000000	0.012903291	8.0000000	45.000000
573.58552	1.0000000	0.00015512923	5.0000000	41.000000
573.75422	1.0000000	0.00013397341	5.0000000	41.000000
601.95876	1.0000000	0.0099397008	4.0000000	43.000000
609.27251	1.0000000	0.014091453	5.0000000	44.000000
613.26251	1.0000000	0.016208097	4.0000000	40.000000
616.71251	1.0000000	0.011916181	4.0000000	40.000000
664.03876	1.0000000	0.022031996	7.0000000	47.000000
671.86501	1.0000000	0.011271477	4.0000000	48.000000
675.19251	1.0000000	0.028315586	4.0000000	42.000000
692.57906	1.0000000	6.0056225e-005	4.0000000	41.000000
700.96376	1.0000000	0.023677745	5.0000000	47.000000
712.83626	1.0000000	0.015861797	5.0000000	45.000000

715.40001	1.0000000	0.016283562	4.0000000	46.000000
727.11874	1.0000000	0.0014508203	8.0000000	41.000000
746.91626	1.0000000	0.0089332223	6.0000000	44.000000
747.29626	1.0000000	0.010704865	4.0000000	43.000000
747.96376	1.0000000	0.020928438	7.0000000	47.000000
778.65001	1.0000000	0.011987368	4.0000000	40.000000
780.76126	1.0000000	0.011369586	6.0000000	45.000000
790.40876	1.0000000	0.012595717	7.0000000	43.000000
795.93751	1.0000000	0.015055411	7.0000000	46.000000
797.68126	1.0000000	0.016072413	4.0000000	40.000000
804.56001	1.0000000	0.011409083	4.0000000	44.000000
809.35501	1.0000000	0.015009456	7.0000000	45.000000
813.48626	1.0000000	0.03288737	8.0000000	42.000000
819.10501	1.0000000	0.010840034	4.0000000	45.000000
820.37501	1.0000000	0.01292923	4.0000000	40.000000
820.42225	1.0000000	3.0054368e-005	5.0000000	41.000000
820.46251	1.0000000	0.013302694	7.0000000	46.000000
826.24251	1.0000000	0.025956135	5.0000000	42.000000
869.31876	1.0000000	0.015120184	5.0000000	40.000000
881.26501	1.0000000	0.011618466	5.0000000	48.000000
887.41251	1.0000000	0.015467612	7.0000000	40.000000
923.45501	1.0000000	0.028736085	7.0000000	42.000000
926.23751	1.0000000	0.014535906	7.0000000	40.000000
965.27376	1.0000000	0.014745477	5.0000000	45.000000
984.03126	1.0000000	0.015035874	5.0000000	40.000000
985.26626	1.0000000	0.013941202	5.0000000	44.000000

Information **block number 77152**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
9.1397282	1.0000000	3.5192487e-005	4.0000000	44.000000
13.469912	1.0000000	0.00023501791	7.0000000	48.000000
29.193639	1.0000000	0.00016802504	7.0000000	46.000000
30.447508	1.0000000	0.01565413	4.0000000	5.0000000
33.520008	1.0000000	0.0098880763	4.0000000	41.000000
34.605008	1.0000000	0.024044359	4.0000000	18.000000
58.709467	1.0000000	6.7128632e-005	4.0000000	48.000000
92.808325	1.0000000	4.5158344e-005	4.0000000	44.000000
96.807508	1.0000000	0.0094505396	5.0000000	41.000000
104.74216	1.0000000	0.0002120644	5.0000000	46.000000
105.68117	1.0000000	0.00018753353	5.0000000	47.000000
127.52376	1.0000000	0.024627694	5.0000000	18.000000
131.14401	1.0000000	6.6516167e-005	4.0000000	43.000000
138.61741	1.0000000	0.000105508	5.0000000	47.000000
152.53251	1.0000000	0.011178014	7.0000000	41.000000
174.39501	1.0000000	0.0083955257	5.0000000	41.000000
177.25870	1.0000000	0.00012597935	5.0000000	43.000000
182.89872	1.0000000	5.9043398e-005	4.0000000	44.000000
188.93310	1.0000000	0.00098548703	8.0000000	46.000000
189.43001	1.0000000	0.025774416	5.0000000	18.000000
191.74772	1.0000000	5.8960545e-005	4.0000000	46.000000
192.64819	1.0000000	4.8702940e-005	4.0000000	46.000000
198.20126	1.0000000	0.020756387	4.0000000	31.000000
207.54388	1.0000000	0.0010167576	8.0000000	46.000000
214.32482	1.0000000	0.0010118908	8.0000000	44.000000
219.08751	1.0000000	0.015995831	4.0000000	42.000000
220.85294	1.0000000	0.00015471867	7.0000000	44.000000
222.20508	1.0000000	0.0001631773	5.0000000	40.000000
230.63327	1.0000000	8.1070322e-005	4.0000000	43.000000
243.93001	1.0000000	0.028293917	6.0000000	18.000000
246.95126	1.0000000	0.009898885	4.0000000	41.000000
253.23431	1.0000000	0.00015518445	5.0000000	46.000000
255.29754	1.0000000	9.0697781e-005	5.0000000	40.000000
263.98501	1.0000000	0.014698113	5.0000000	5.0000000
289.04406	1.0000000	0.00013745804	5.0000000	45.000000
289.30887	1.0000000	0.00023271726	7.0000000	46.000000
295.56876	1.0000000	0.01323797	4.0000000	42.000000
309.56126	1.0000000	0.026509487	4.0000000	18.000000
309.90531	1.0000000	9.9308578e-005	6.0000000	43.000000
311.09376	1.0000000	0.013343525	5.0000000	42.000000
322.74671	1.0000000	0.0010345837	8.0000000	40.000000
324.61455	1.0000000	8.5214126e-005	4.0000000	48.000000

337.36251	1.0000000	0.016035198	8.0000000	42.000000
343.96278	1.0000000	1.7256155e-005	4.0000000	45.000000
362.88251	1.0000000	0.0088507223	5.0000000	41.000000
377.88842	1.0000000	0.00015923588	5.0000000	44.000000
380.80126	1.0000000	0.024216168	6.0000000	31.000000
389.26292	1.0000000	1.0909091e-005	4.0000000	40.000000
425.40432	1.0000000	9.8813210e-005	5.0000000	44.000000
441.62001	1.0000000	0.011767756	5.0000000	41.000000
450.63692	1.0000000	0.00019380521	6.0000000	46.000000
476.24876	1.0000000	0.02763714	7.0000000	18.000000
494.38378	1.0000000	5.9539641e-005	4.0000000	43.000000
512.21321	1.0000000	4.2704406e-005	4.0000000	43.000000
547.54489	1.0000000	4.3511948e-005	4.0000000	45.000000
565.93232	1.0000000	0.00015069594	7.0000000	45.000000
569.41251	1.0000000	0.010799379	4.0000000	42.000000
578.57501	1.0000000	0.015049237	5.0000000	42.000000
579.57001	1.0000000	0.025829648	4.0000000	31.000000
589.59501	1.0000000	0.011334438	5.0000000	41.000000
591.99898	1.0000000	0.00025116217	7.0000000	47.000000
601.03899	1.0000000	4.2123705e-005	6.0000000	47.000000
609.56001	1.0000000	0.011735148	4.0000000	5.0000000
615.65873	1.0000000	0.00010220385	5.0000000	43.000000
620.17386	1.0000000	5.8450079e-005	4.0000000	46.000000
647.74251	1.0000000	0.025369275	4.0000000	18.000000
654.76411	1.0000000	7.5033124e-005	4.0000000	40.000000
658.47126	1.0000000	0.011433551	4.0000000	4.0000000
667.30626	1.0000000	0.036555086	4.0000000	22.000000
671.51732	1.0000000	0.00015900447	5.0000000	44.000000
678.70751	1.0000000	0.02447514	5.0000000	31.000000
679.53803	1.0000000	4.6280450e-005	4.0000000	47.000000
711.37432	1.0000000	9.0456596e-005	4.0000000	46.000000
715.28177	1.0000000	6.8467750e-005	4.0000000	47.000000
717.69229	1.0000000	0.00033763724	7.0000000	46.000000
749.34501	1.0000000	0.021156225	4.0000000	31.000000
778.26839	1.0000000	6.9183066e-005	4.0000000	44.000000
789.61876	1.0000000	0.035652189	5.0000000	22.000000
802.68251	1.0000000	0.021161415	6.0000000	31.000000
809.08712	1.0000000	2.8485125e-005	4.0000000	46.000000
812.95917	1.0000000	3.8951649e-005	4.0000000	46.000000
832.49783	1.0000000	7.8816026e-005	4.0000000	46.000000
839.61683	1.0000000	3.6758261e-005	5.0000000	48.000000
842.65850	1.0000000	5.6704584e-005	4.0000000	43.000000
851.67709	1.0000000	0.00021736763	5.0000000	48.000000
852.31751	1.0000000	0.027869263	6.0000000	18.000000
854.28251	1.0000000	0.023732698	5.0000000	31.000000
857.34030	1.0000000	7.1243534e-005	4.0000000	43.000000
872.59842	1.0000000	0.00013073741	5.0000000	43.000000
893.78072	1.0000000	0.00023629178	5.0000000	40.000000
915.59731	1.0000000	5.8541521e-005	4.0000000	47.000000
926.41876	1.0000000	0.015169888	7.0000000	42.000000
949.83126	1.0000000	0.010278809	4.0000000	42.000000
949.86070	1.0000000	7.6363636e-006	6.0000000	40.000000
977.57819	1.0000000	0.00015983451	7.0000000	43.000000

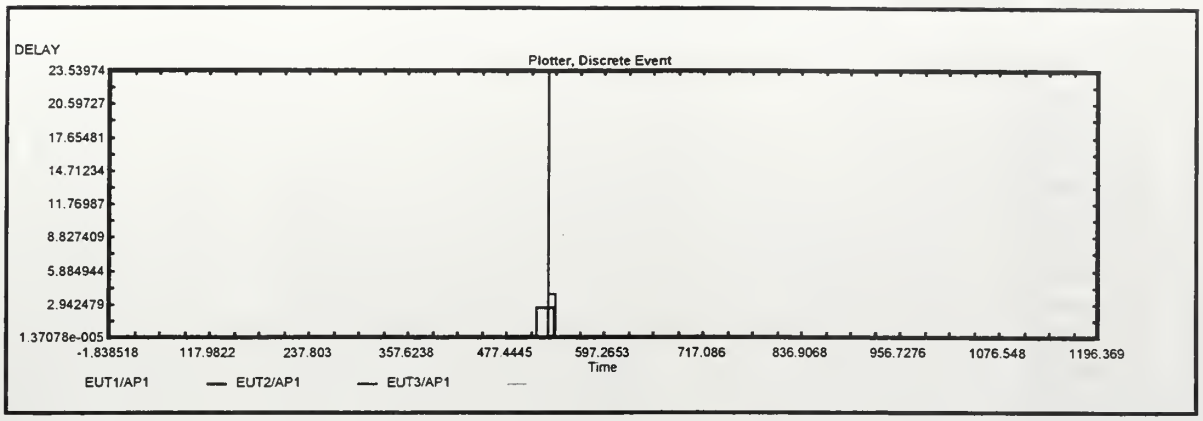
Information **block number 83021**

Input Parameters:

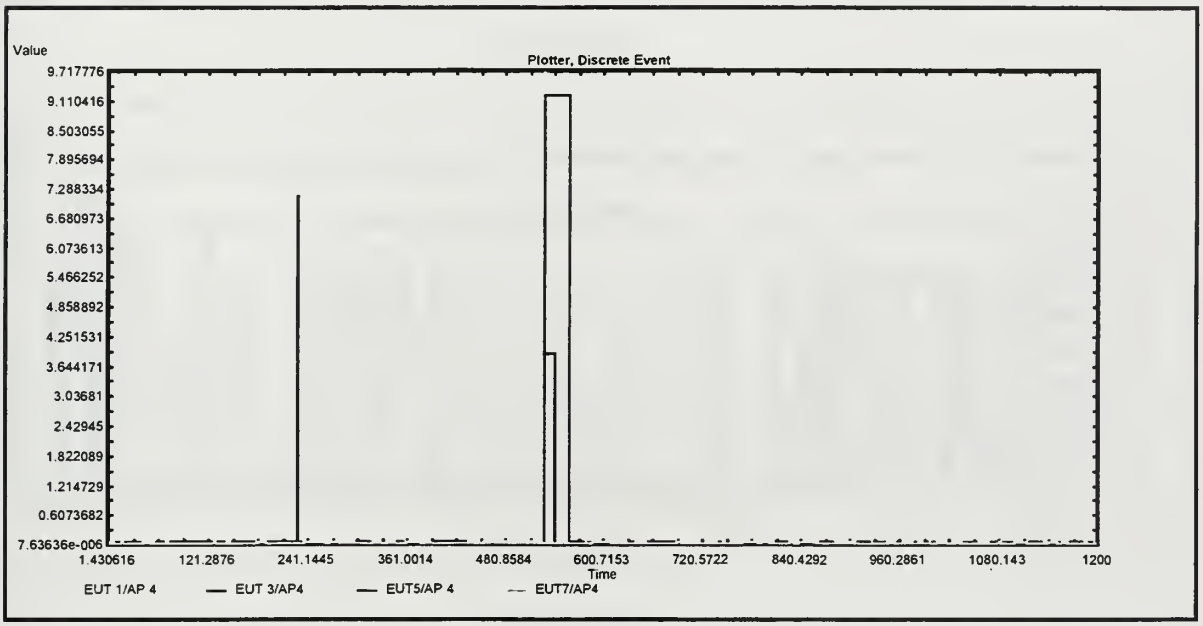
Arrival Time	Priority	time differe	COMMTYPE	OriginAP
7.3178612	1.0000000	0.00026417613	5.0000000	17.000000
10.205012	1.0000000	0.017287295	4.0000000	5.0000000
23.316502	1.0000000	0.00030234537	5.0000000	17.000000
30.517197	1.0000000	0.00032726669	6.0000000	16.000000
33.398762	1.0000000	0.027299231	6.0000000	4.0000000
39.833824	1.0000000	0.00099676327	4.0000000	17.000000
50.461262	1.0000000	0.016689992	4.0000000	5.0000000
51.505012	1.0000000	0.024801431	4.0000000	4.0000000
71.480012	1.0000000	0.02933235	7.0000000	4.0000000
74.342512	1.0000000	0.016703903	4.0000000	5.0000000
77.236262	1.0000000	0.028848672	4.0000000	4.0000000
81.321331	1.0000000	5.6952565e-005	4.0000000	17.000000
96.081652	1.0000000	0.00022717406	7.0000000	16.000000
110.74251	1.0000000	0.024107648	6.0000000	4.0000000
120.52121	1.0000000	0.00010201134	4.0000000	16.000000

121.39589	1.0000000	0.00026947983	4.0000000	16.000000
123.01126	1.0000000	0.028799217	7.0000000	4.0000000
133.47185	1.0000000	0.00018994158	4.0000000	16.000000
143.52205	1.0000000	0.00029736263	5.0000000	16.000000
146.67103	1.0000000	8.3059914e-005	4.0000000	17.000000
176.61126	1.0000000	0.02642524	6.0000000	4.0000000
177.62494	1.0000000	0.00024870085	7.0000000	16.000000
186.66751	1.0000000	0.020210378	8.0000000	5.0000000
187.24876	1.0000000	0.027089672	5.0000000	4.0000000
195.56751	1.0000000	0.017308253	4.0000000	5.0000000
198.51126	1.0000000	0.028145049	6.0000000	4.0000000
198.54251	1.0000000	0.025497521	4.0000000	4.0000000
229.76575	1.0000000	0.00027797279	4.0000000	16.000000
238.34184	1.0000000	0.00033960391	4.0000000	16.000000
258.61751	1.0000000	0.012728516	4.0000000	5.0000000
261.38504	1.0000000	0.00031314113	7.0000000	17.000000
269.08626	1.0000000	0.012762758	5.0000000	5.0000000
271.25433	1.0000000	9.5791547e-005	4.0000000	17.000000
276.70501	1.0000000	0.025378605	5.0000000	4.0000000
294.98001	1.0000000	0.013577575	7.0000000	5.0000000
314.15088	1.0000000	0.00018744815	4.0000000	16.000000
314.96638	1.0000000	6.2608697e-005	4.0000000	16.000000
319.24171	1.0000000	0.00028184674	5.0000000	17.000000
321.41696	1.0000000	0.0016966425	4.0000000	17.000000
328.29876	1.0000000	0.017228301	4.0000000	5.0000000
340.98626	1.0000000	0.013017609	6.0000000	5.0000000
354.23001	1.0000000	0.012194434	5.0000000	5.0000000
384.98626	1.0000000	0.013407898	4.0000000	5.0000000
395.50619	1.0000000	9.0668268e-005	4.0000000	17.000000
399.19876	1.0000000	0.02477257	7.0000000	4.0000000
412.55077	1.0000000	0.00021019625	5.0000000	17.000000
414.59828	1.0000000	0.00013965377	5.0000000	17.000000
425.14876	1.0000000	0.015722202	4.0000000	5.0000000
437.17376	1.0000000	0.017325515	4.0000000	5.0000000
441.02006	1.0000000	0.00015793365	4.0000000	17.000000
456.62044	1.0000000	0.00011985027	4.0000000	17.000000
464.77008	1.0000000	0.00040066177	5.0000000	16.000000
466.49876	1.0000000	0.028710743	4.0000000	4.0000000
513.87963	1.0000000	0.00095580119	8.0000000	17.000000
536.77376	1.0000000	0.025595519	4.0000000	4.0000000
537.01779	1.0000000	0.00033628368	7.0000000	16.000000
557.43136	1.0000000	0.0017574278	5.0000000	16.000000
573.61126	1.0000000	0.025896752	4.0000000	4.0000000
573.78001	1.0000000	0.02592631	4.0000000	4.0000000
601.96126	1.0000000	0.012443701	5.0000000	5.0000000
609.27376	1.0000000	0.015345453	5.0000000	5.0000000
613.27376	1.0000000	0.027462097	4.0000000	4.0000000
616.73001	1.0000000	0.029420181	8.0000000	4.0000000
664.01717	1.0000000	0.00044924105	5.0000000	17.000000
671.85382	1.0000000	8.7284291e-005	4.0000000	17.000000
675.18001	1.0000000	0.015819586	4.0000000	5.0000000
692.60501	1.0000000	0.026014452	8.0000000	4.0000000
700.94035	1.0000000	0.00026729809	6.0000000	17.000000
712.82053	1.0000000	0.00013025982	4.0000000	16.000000
715.38499	1.0000000	0.0012652643	8.0000000	16.000000
727.14251	1.0000000	0.025218317	4.0000000	4.0000000
746.92376	1.0000000	0.016437222	5.0000000	5.0000000
747.29876	1.0000000	0.013208865	4.0000000	5.0000000
747.94298	1.0000000	0.0001530072	5.0000000	17.000000
778.66751	1.0000000	0.029491368	5.0000000	4.0000000
780.75013	1.0000000	0.00024119983	4.0000000	16.000000
790.41126	1.0000000	0.015099717	7.0000000	5.0000000
795.92261	1.0000000	0.0001571142	4.0000000	16.000000
797.69876	1.0000000	0.033572413	8.0000000	4.0000000
804.56751	1.0000000	0.018909083	8.0000000	5.0000000
809.34030	1.0000000	0.00030667154	8.0000000	16.000000
813.46751	1.0000000	0.01414137	5.0000000	5.0000000
819.09426	1.0000000	9.5842432e-005	4.0000000	16.000000
820.38626	1.0000000	0.02417923	6.0000000	4.0000000
820.44876	1.0000000	0.026537852	5.0000000	4.0000000
820.44955	1.0000000	0.00034018574	5.0000000	16.000000
826.23001	1.0000000	0.013460135	4.0000000	5.0000000

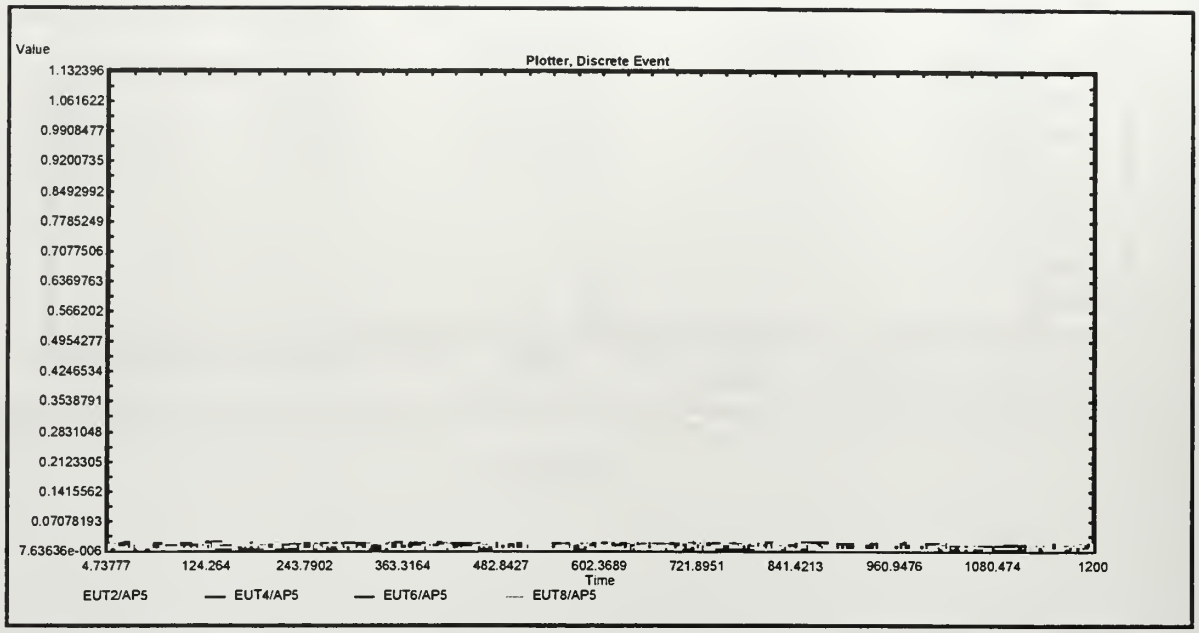
869.33001	1.0000000	0.026374184	5.0000000	4.0000000
881.25367	1.0000000	0.00027609591	5.0000000	17.000000
887.42376	1.0000000	0.026721612	8.0000000	4.0000000
923.44251	1.0000000	0.016240085	4.0000000	5.0000000
926.24876	1.0000000	0.025789906	4.0000000	4.0000000
965.25946	1.0000000	0.00044756962	4.0000000	16.000000
984.04251	1.0000000	0.026289874	7.0000000	4.0000000
985.26751	1.0000000	0.015195202	7.0000000	5.0000000



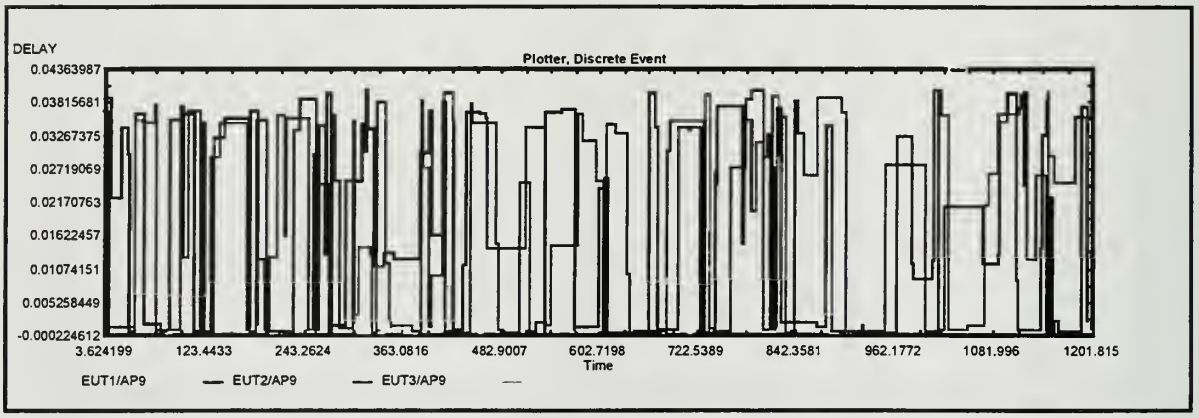
Run 3 AP 1



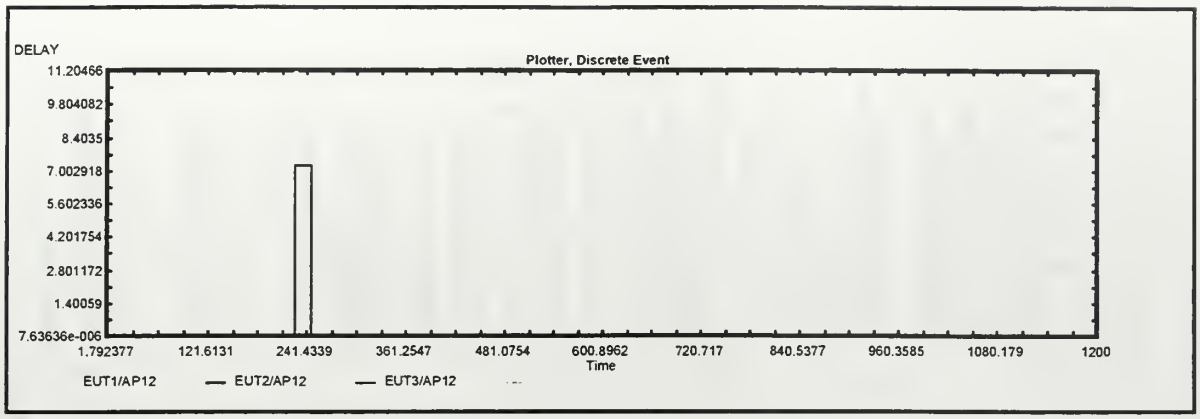
Run 3 AP 4



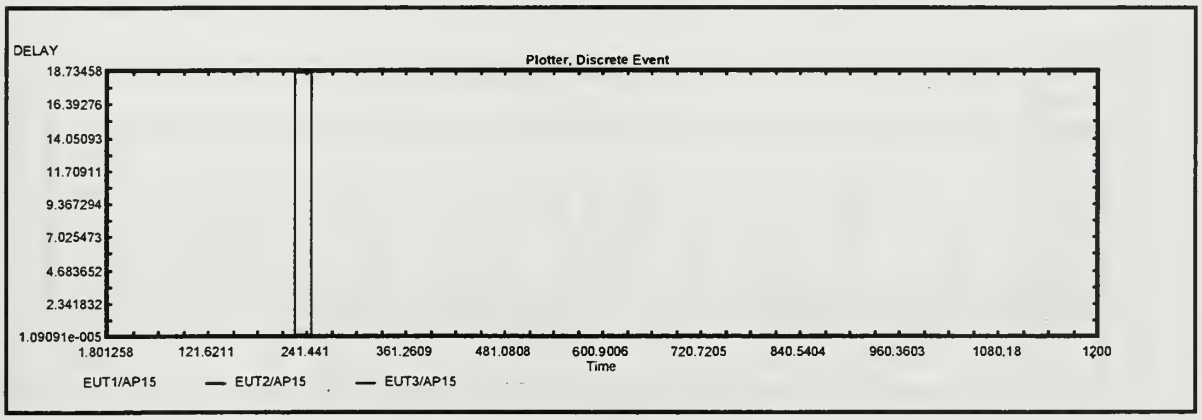
Run 3 AP 5



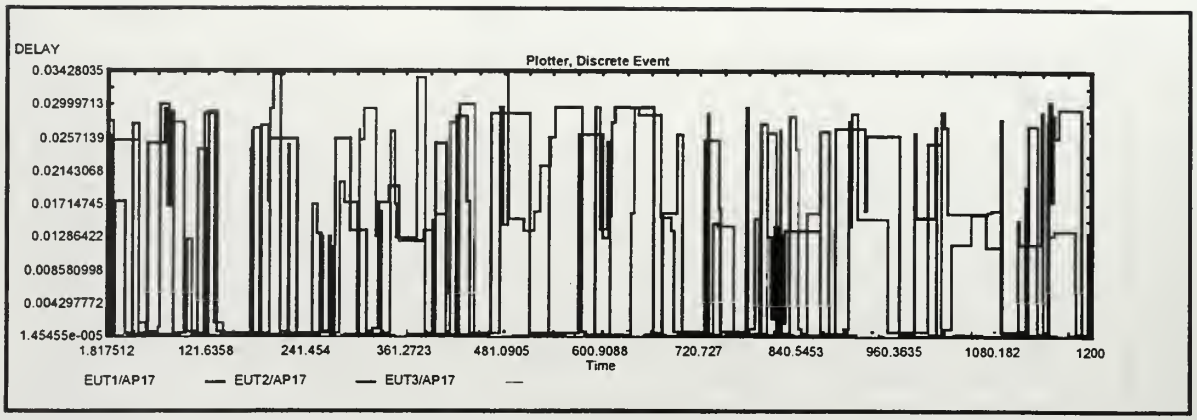
Run 3 AP 9



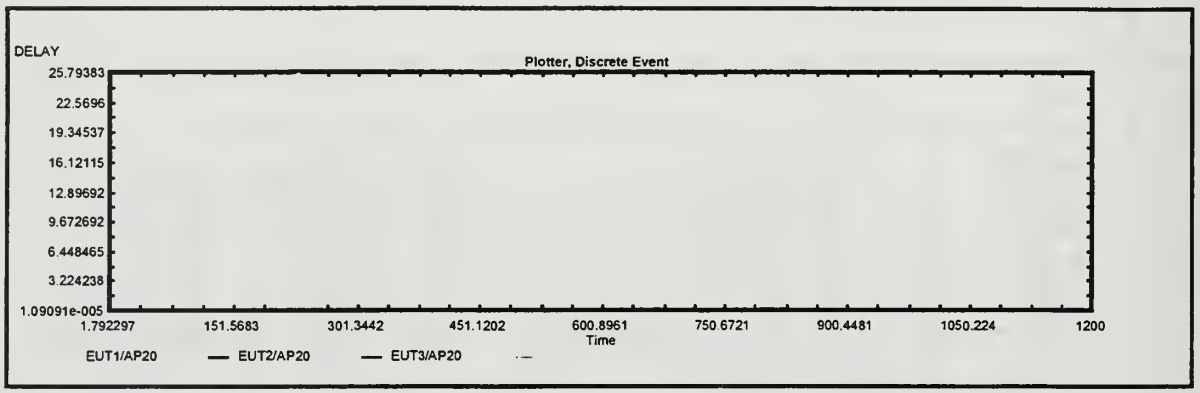
Run 3 AP 12



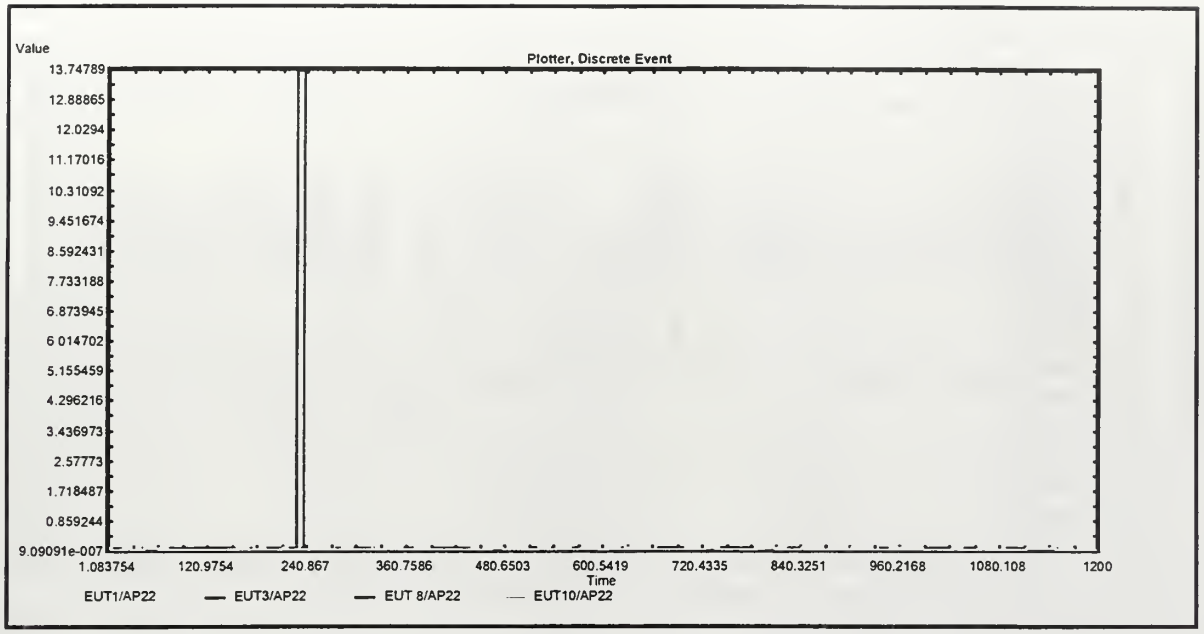
Run 3 AP 15



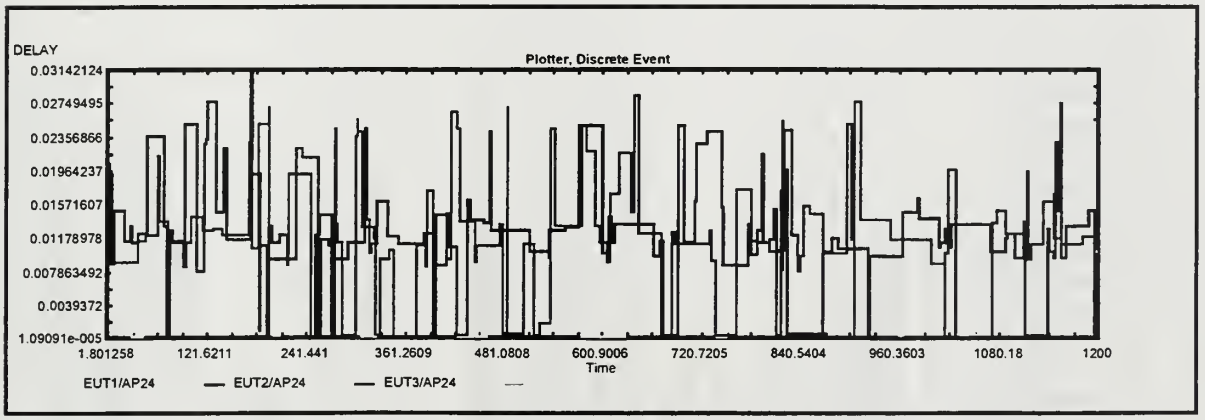
Run 3 AP 17



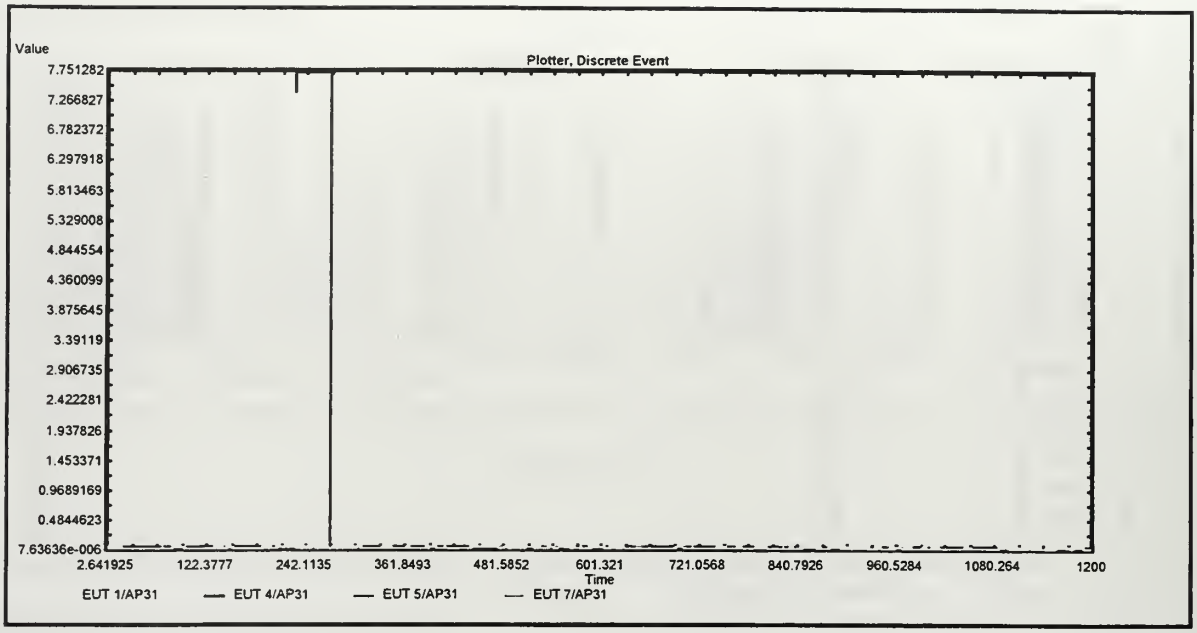
Run 3 AP 20



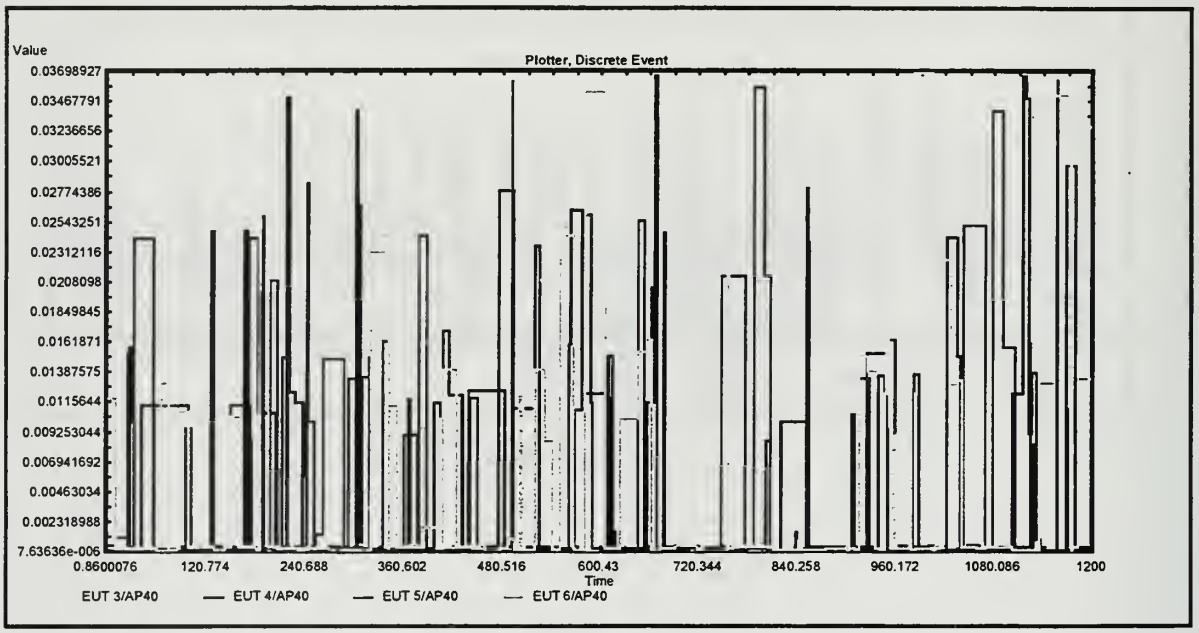
Run 3 AP 22



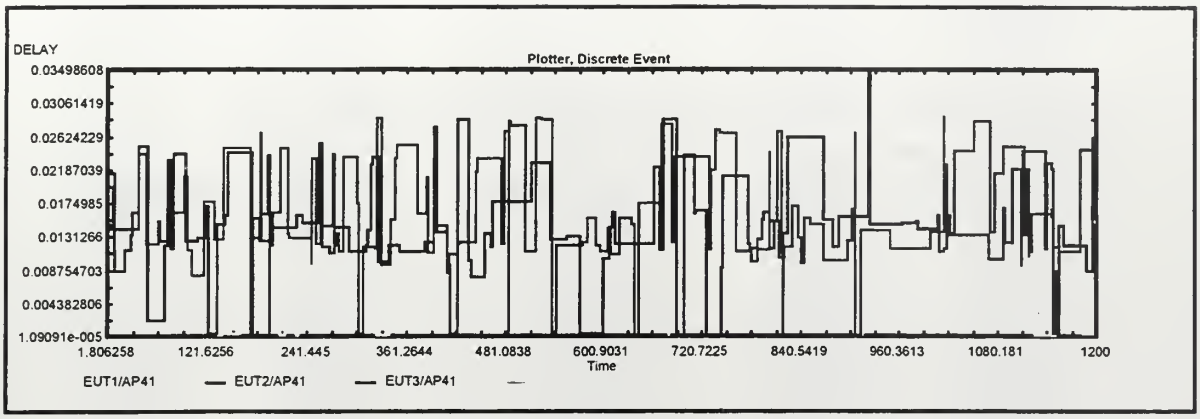
Run 3 AP 24



Run 3 AP 31



Run 3 AP 40


DELAY
Plotter, Discrete Event
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0.0131266
0.008754703
0.004382806
1.09091e-005
1.806258
121.6256
241.445
361.2644
481.0838
600.9031
720.7225
840.5419
960.3613
1080.181
1200
Time
EUT1/AP41
EUT2/AP41
EUT3/AP41

Run 3 AP 41

Extend Dialog Report - 5/9/00 1:26:09 PM
Run #0

INFORMATION RUN 3 VTC W/AP 5 AT 200 SEC AND AP 1 AT 500 SEC, 11MB

Information **block number 629**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginEUT
908.06251	1.0000000	0.023754712	4.0000000	4.0000000
914.86876	1.0000000	0.022537955	4.0000000	4.0000000
951.14376	1.0000000	0.018947237	5.0000000	5.0000000
1001.1250	1.0000000	0.019863952	4.0000000	4.0000000
1016.4250	1.0000000	0.023703324	4.0000000	4.0000000
1017.2475	1.0000000	0.024839727	4.0000000	16.000000
1019.8500	1.0000000	0.019562191	5.0000000	5.0000000
1030.0875	1.0000000	0.01918273	5.0000000	4.0000000
1053.0250	1.0000000	0.02311871	4.0000000	4.0000000
1072.3563	1.0000000	0.023486261	5.0000000	4.0000000
1078.7250	1.0000000	0.02364979	4.0000000	4.0000000
1088.5688	1.0000000	0.023469842	5.0000000	5.0000000
1114.1500	1.0000000	0.019369077	4.0000000	5.0000000
1115.7000	1.0000000	0.020521551	4.0000000	5.0000000
1119.2563	1.0000000	0.026719894	8.0000000	4.0000000
1119.4413	1.0000000	0.02467242	5.0000000	16.000000
1124.5404	1.0000000	4.9533165e-005	4.0000000	1.0000000
1134.4875	1.0000000	0.023473052	4.0000000	5.0000000
1146.5470	1.0000000	4.0715178e-005	4.0000000	1.0000000
1147.2063	1.0000000	0.0290740	8.0000000	4.0000000
1148.3313	1.0000000	0.020420182	4.0000000	5.0000000
1156.7563	1.0000000	0.020967787	6.0000000	4.0000000
1182.2438	1.0000000	0.023045927	4.0000000	5.0000000

Information **block number 969**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginEUT
945.74376	1.0000000	0.024613182	5.0000000	5.0000000
949.96876	1.0000000	0.02055387	4.0000000	5.0000000
962.31876	1.0000000	0.019989846	5.0000000	4.0000000
966.38751	1.0000000	0.019682362	5.0000000	5.0000000
978.18751	1.0000000	0.019437936	5.0000000	5.0000000
999.11876	1.0000000	0.032359972	8.0000000	4.0000000
1023.6975	1.0000000	0.028475423	8.0000000	17.000000
1029.4875	1.0000000	0.020136304	7.0000000	5.0000000
1050.4500	1.0000000	0.023233826	4.0000000	4.0000000
1069.0563	1.0000000	0.024759714	4.0000000	5.0000000
1082.2250	1.0000000	0.020320383	4.0000000	5.0000000
1083.9375	1.0000000	0.018887958	5.0000000	5.0000000
1087.3813	1.0000000	0.036576232	8.0000000	4.0000000
1089.8750	1.0000000	0.019536382	5.0000000	5.0000000
1090.8438	1.0000000	0.021107507	5.0000000	5.0000000
1103.1625	1.0000000	0.023173704	4.0000000	4.0000000
1110.4000	1.0000000	0.020762517	6.0000000	5.0000000
1111.2938	1.0000000	0.018807715	4.0000000	5.0000000
1116.3313	1.0000000	0.024350736	7.0000000	5.0000000
1117.8438	1.0000000	0.019766929	5.0000000	4.0000000
1127.0375	1.0000000	0.023303011	4.0000000	4.0000000
1151.3625	1.0000000	0.018980889	7.0000000	4.0000000
1161.4000	1.0000000	0.024698351	5.0000000	5.0000000
1168.7497	1.0000000	9.8520125e-005	5.0000000	1.0000000
1185.0188	1.0000000	0.024178656	7.0000000	4.0000000
1185.0688	1.0000000	0.020193356	4.0000000	4.0000000
1196.1813	1.0000000	0.021246683	5.0000000	4.0000000

Information **block number 4915**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginEUT
1016.4275	1.0000000	0.026203324	7.0000000	31.000000
1019.8588	1.0000000	0.028312191	4.0000000	36.000000
1030.0963	1.0000000	0.02793273	4.0000000	31.000000
1053.0275	1.0000000	0.02561871	6.0000000	31.000000

1072.3713	1.0000000	0.038486261	4.0000000	32.000000
1078.7275	1.0000000	0.02614979	8.0000000	34.000000
1114.1588	1.0000000	0.028119077	4.0000000	37.000000
1115.7088	1.0000000	0.029271551	5.0000000	38.000000
1119.2713	1.0000000	0.041719894	4.0000000	32.000000
1119.4463	1.0000000	0.02967242	4.0000000	38.000000
1124.5404	1.0000000	9.9129986e-005	5.0000000	19.000000
1134.4900	1.0000000	0.025973052	4.0000000	34.000000
1146.5471	1.0000000	0.0001718149	4.0000000	19.000000
1147.1780	1.0000000	0.00085583678	4.0000000	19.000000
1148.3400	1.0000000	0.029170182	4.0000000	34.000000
1156.7775	1.0000000	0.042217787	4.0000000	32.000000

Information **block number 7542**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
1117.4881	1.0000000	0.0013716273	8.0000000	5.0000000
1129.6438	1.0000000	0.014453914	5.0000000	22.000000
1137.5661	1.0000000	0.00044169365	8.0000000	4.0000000
1138.4265	1.0000000	5.3836959e-005	4.0000000	5.0000000
1139.7675	1.0000000	0.016219905	5.0000000	31.000000
1151.0863	1.0000000	0.00078305215	8.0000000	4.0000000
1160.9813	1.0000000	0.015274934	5.0000000	22.000000
1164.5375	1.0000000	0.010785986	4.0000000	22.000000

Information **block number 9086**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
1042.1584	1.0000000	0.00011805108	5.0000000	13.000000
1052.6750	1.0000000	0.013588828	4.0000000	14.000000
1069.3900	1.0000000	0.021502569	5.0000000	16.000000
1118.8624	1.0000000	8.7491736e-005	5.0000000	5.0000000
1138.8001	1.0000000	6.2119201e-005	4.0000000	13.000000
1156.3125	1.0000000	0.012145528	6.0000000	22.000000
1159.6525	1.0000000	0.030247941	8.0000000	17.000000
1175.2113	1.0000000	4.6509883e-005	4.0000000	5.0000000
1184.2846	1.0000000	3.6712925e-005	4.0000000	4.0000000

Information **block number 11085**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
971.25626	1.0000000	0.016582431	6.0000000	18.000000
973.32280	1.0000000	4.8926147e-005	4.0000000	12.000000
974.16876	1.0000000	0.0099114921	4.0000000	40.000000
977.74139	1.0000000	6.0033166e-005	4.0000000	4.0000000
1000.9754	1.0000000	0.00010033996	7.0000000	4.0000000
1005.9619	1.0000000	0.00065645507	8.0000000	5.0000000
1020.6750	1.0000000	0.01057206	4.0000000	40.000000
1035.8394	1.0000000	4.8795840e-005	4.0000000	5.0000000
1050.3247	1.0000000	0.00023905727	7.0000000	13.000000
1053.0500	1.0000000	0.0094281418	8.0000000	22.000000
1080.3307	1.0000000	0.00011145002	8.0000000	4.0000000
1111.1250	1.0000000	0.010978299	5.0000000	40.000000
1111.8988	1.0000000	0.013559792	6.0000000	31.000000
1119.2611	1.0000000	6.8677839e-005	5.0000000	5.0000000
1133.1500	1.0000000	0.011700212	6.0000000	40.000000
1137.0411	1.0000000	9.1277616e-005	4.0000000	12.000000
1150.4202	1.0000000	8.9817089e-005	4.0000000	4.0000000
1178.8995	1.0000000	8.0630041e-005	4.0000000	5.0000000
1191.8438	1.0000000	0.011853957	4.0000000	14.000000
1195.0813	1.0000000	0.012703687	5.0000000	18.000000

Information **block number 15600**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
1100.8075	1.0000000	0.025184331	4.0000000	22.000000
1119.3888	1.0000000	0.012703511	4.0000000	5.0000000
1129.9829	1.0000000	7.2014111e-005	4.0000000	19.000000
1130.4321	1.0000000	0.00018801337	7.0000000	20.000000
1132.8520	1.0000000	0.00020160243	6.0000000	19.000000
1136.4244	1.0000000	0.00035569941	7.0000000	21.000000
1137.2013	1.0000000	0.031289642	8.0000000	22.000000

1158.7449	1.0000000	0.00013696541	7.0000000	21.000000
1162.7321	1.0000000	5.4017867e-005	4.0000000	19.000000
1172.7032	1.0000000	0.00026582114	6.0000000	19.000000
1197.8906	1.0000000	0.00022957241	5.0000000	19.000000
1199.7436	1.0000000	5.2454463e-005	5.0000000	19.000000

Information **block number 17386**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
945.74626	1.0000000	0.027113182	4.0000000	18.000000
949.97126	1.0000000	0.02305387	4.0000000	18.000000
962.29885	1.0000000	8.3129454e-005	5.0000000	14.000000
966.39001	1.0000000	0.022182362	4.0000000	18.000000
978.19126	1.0000000	0.023187936	7.0000000	22.000000
999.09626	1.0000000	0.0098599719	6.0000000	5.0000000
1023.7063	1.0000000	0.037225423	5.0000000	40.000000
1029.4913	1.0000000	0.023886304	5.0000000	22.000000
1050.4268	1.0000000	6.7719290e-005	4.0000000	14.000000
1069.0613	1.0000000	0.029759714	4.0000000	31.000000
1082.2288	1.0000000	0.024070383	5.0000000	22.000000
1083.9413	1.0000000	0.022637958	5.0000000	22.000000
1087.3450	1.0000000	0.00031701909	6.0000000	14.000000
1089.8800	1.0000000	0.024536382	4.0000000	31.000000
1090.8475	1.0000000	0.024857507	4.0000000	22.000000
1103.1525	1.0000000	0.013173704	4.0000000	5.0000000
1110.4150	1.0000000	0.035762517	4.0000000	17.000000
1111.3088	1.0000000	0.033807715	6.0000000	17.000000
1116.3338	1.0000000	0.026850736	4.0000000	18.000000
1117.8240	1.0000000	1.0909091e-005	5.0000000	15.000000
1127.0143	1.0000000	0.00012521423	5.0000000	14.000000
1151.3775	1.0000000	0.033980889	6.0000000	16.000000
1161.4050	1.0000000	0.029698351	4.0000000	31.000000
1168.7575	1.0000000	0.0078690306	4.0000000	4.0000000
1185.0088	1.0000000	0.014178656	6.0000000	5.0000000
1185.0486	1.0000000	4.8579813e-005	4.0000000	14.000000
1196.1713	1.0000000	0.011246683	7.0000000	5.0000000

Information **block number 17880**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
1070.2750	1.0000000	0.018780819	4.0000000	22.000000
1089.3546	1.0000000	0.0025206261	8.0000000	4.0000000
1091.2563	1.0000000	0.009707261	5.0000000	40.000000
1100.1063	1.0000000	0.0081165322	5.0000000	40.000000
1111.5750	1.0000000	0.013083599	7.0000000	40.000000
1111.8125	1.0000000	0.022368884	4.0000000	22.000000
1113.5562	1.0000000	0.00047293417	6.0000000	13.000000
1140.8574	1.0000000	0.00010369565	6.0000000	4.0000000
1141.7063	1.0000000	0.0088562152	4.0000000	40.000000
1148.1625	1.0000000	0.0081581207	4.0000000	40.000000
1148.9750	1.0000000	0.0085190932	5.0000000	40.000000
1149.7011	1.0000000	0.0013153173	6.0000000	12.000000
1152.0250	1.0000000	0.024780119	8.0000000	22.000000
1153.7828	1.0000000	8.1880616e-005	4.0000000	12.000000
1156.4608	1.0000000	0.00013322067	5.0000000	4.0000000
1162.4965	1.0000000	0.0020225691	8.0000000	5.0000000
1189.2125	1.0000000	0.012258218	4.0000000	40.000000
1196.5625	1.0000000	0.014611448	4.0000000	18.000000

Information **block number 26376**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
949.98501	1.0000000	0.03680787	4.0000000	22.00000
962.29911	1.0000000	0.00033738666	5.0000000	10.000000
966.40376	1.0000000	0.035936362	5.0000000	22.000000
978.20501	1.0000000	0.036941936	7.0000000	31.000000
999.08660	1.0000000	0.00019923884	4.0000000	7.0000000
1023.7063	1.0000000	0.037225423	5.0000000	40.000000
1029.5113	1.0000000	0.043886304	8.0000000	31.000000
1050.4271	1.0000000	0.00035938744	5.0000000	9.0000000
1069.0688	1.0000000	0.037267714	8.0000000	40.000000
1082.2413	1.0000000	0.036574383	4.0000000	22.000000

1083.9538	1.0000000	0.035141958	5.0000000	22.000000
1087.3449	1.0000000	0.00020239985	4.0000000	9.0000000
1089.8925	1.0000000	0.037040382	4.0000000	31.000000
1090.8600	1.0000000	0.037361507	5.0000000	22.000000
1110.4088	1.0000000	0.029516517	5.0000000	18.000000
1111.3025	1.0000000	0.027557715	7.0000000	18.000000
1116.3338	1.0000000	0.026850736	4.0000000	18.000000
1117.8475	1.0000000	0.023516929	4.0000000	12.000000
1127.0145	1.0000000	0.00031455166	5.0000000	9.0000000
1151.3550	1.0000000	0.011496889	4.0000000	13.000000
1161.4125	1.0000000	0.037198351	4.0000000	40.000000
1168.7499	1.0000000	0.00025551882	7.0000000	6.0000000
1184.9948	1.0000000	0.0002565001	4.0000000	7.0000000
1185.0488	1.0000000	0.00027812143	4.0000000	9.0000000
1196.1602	1.0000000	0.00023482672	5.0000000	7.0000000

Information **block number 38893**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
914.86001	1.0000000	0.013787955	5.0000000	26.000000
951.13626	1.0000000	0.011447237	4.0000000	27.000000
1001.1138	1.0000000	0.0086139521	7.0000000	22.000000
1016.4016	1.0000000	0.00025684	6.0000000	24.000000
1017.2325	1.0000000	0.0098397269	4.0000000	29.000000
1019.8500	1.0000000	0.019562191	8.0000000	28.000000
1030.0684	1.0000000	6.9018239e-005	6.0000000	24.000000
1053.0020	1.0000000	6.2194530e-005	4.0000000	24.000000
1072.3463	1.0000000	0.013486261	4.0000000	25.000000
1078.7163	1.0000000	0.01489979	4.0000000	26.000000
1088.5575	1.0000000	0.012219842	5.0000000	29.000000
1114.1500	1.0000000	0.019369077	6.0000000	28.000000
1115.6888	1.0000000	0.0092715514	6.0000000	29.000000
1119.2400	1.0000000	0.010469894	8.0000000	25.000000
1119.4275	1.0000000	0.01092242	5.0000000	30.000000
1124.5513	1.0000000	0.010917731	4.0000000	22.000000
1134.4800	1.0000000	0.015973052	6.0000000	27.000000
1146.5638	1.0000000	0.016813842	8.0000000	22.000000
1147.1888	1.0000000	0.0115740	4.0000000	22.000000
1148.3225	1.0000000	0.011670182	4.0000000	26.000000
1156.7463	1.0000000	0.010967787	7.0000000	25.000000
1182.2325	1.0000000	0.011795927	4.0000000	29.000000

Information **block number 43037**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
730.66501	1.0000000	0.014697005	4.0000000	4.0000000
740.82581	1.0000000	6.3448891e-005	4.0000000	28.000000
758.57141	1.0000000	4.6497891e-005	4.0000000	29.000000
764.28501	1.0000000	0.041227599	5.0000000	40.000000
769.28501	1.0000000	0.011579876	4.0000000	5.0000000
773.82786	1.0000000	3.9272178e-005	4.0000000	22.000000
774.14322	1.0000000	4.1325420e-005	4.0000000	28.000000
797.17586	1.0000000	0.0002410834	7.0000000	22.000000
823.16884	1.0000000	4.3521279e-005	4.0000000	28.000000
824.16984	1.0000000	7.1878654e-005	4.0000000	29.000000
828.83621	1.0000000	6.9339507e-005	4.0000000	27.000000
829.62679	1.0000000	1.0909091e-005	7.0000000	28.000000
829.92377	1.0000000	0.0001194895	7.0000000	27.000000
843.52478	1.0000000	0.00011910341	5.0000000	29.000000
844.47515	1.0000000	5.4358443e-005	4.0000000	29.000000
860.06251	1.0000000	0.012204692	4.0000000	23.000000
869.78917	1.0000000	7.8552221e-005	4.0000000	22.000000
878.33821	1.0000000	0.00028487866	7.0000000	26.000000
879.21589	1.0000000	7.8950590e-005	4.0000000	27.000000
911.75649	1.0000000	0.00089011092	8.0000000	25.000000
925.44126	1.0000000	0.010276098	4.0000000	5.0000000
938.75876	1.0000000	0.024244853	4.0000000	31.000000
948.18392	1.0000000	5.3725255e-005	4.0000000	22.000000
976.82796	1.0000000	0.00023280994	6.0000000	30.000000
995.51001	1.0000000	0.040035402	4.0000000	40.000000
1013.4417	1.0000000	5.6108747e-005	4.0000000	28.000000
1015.6596	1.0000000	4.3411376e-005	4.0000000	29.000000

1027.0362	1.0000000	7.9173695e-005	4.0000000	22.000000
1052.1938	1.0000000	0.013578213	8.0000000	23.000000
1063.5775	1.0000000	0.0090201935	4.0000000	4.0000000
1069.5609	1.0000000	7.4179775e-005	4.0000000	26.000000
1090.6600	1.0000000	0.03869443	4.0000000	40.000000
1131.2425	1.0000000	9.7121226e-005	7.0000000	22.000000
1132.5363	1.0000000	0.027763838	5.0000000	18.000000
1136.4925	1.0000000	0.034792212	8.0000000	18.000000
1151.2479	1.0000000	0.00010774351	5.0000000	26.000000
1191.3587	1.0000000	6.3205810e-005	4.0000000	30.000000

Information **block number 58438**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
1078.0648	1.0000000	0.00030017185	5.0000000	39.000000
1089.9987	1.0000000	6.4441812e-005	4.0000000	36.000000
1110.2395	1.0000000	2.7320272e-005	4.0000000	34.000000
1181.2538	1.0000000	0.02636867	4.0000000	40.000000
1199.2000	1.0000000	0.016856264	4.0000000	32.000000

Information **block number 69342**

Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
1070.2663	1.0000000	0.010030819	5.0000000	44.000000
1089.3688	1.0000000	0.016642722	4.0000000	40.000000
1091.2588	1.0000000	0.012207261	4.0000000	48.000000
1100.1200	1.0000000	0.021866532	4.0000000	47.000000
1111.5713	1.0000000	0.0093335986	7.0000000	48.000000
1111.8038	1.0000000	0.013618884	8.0000000	44.000000
1113.5800	1.0000000	0.024245808	6.0000000	42.000000
1140.8688	1.0000000	0.011438684	5.0000000	40.000000
1141.7200	1.0000000	0.022606215	5.0000000	47.000000
1148.1763	1.0000000	0.021908121	4.0000000	47.000000
1148.9775	1.0000000	0.011019093	5.0000000	48.000000
1149.6999	1.0000000	0.0001519218	5.0000000	41.000000
1152.0088	1.0000000	0.0085301191	4.0000000	43.000000
1153.7827	1.0000000	2.4704818e-005	4.0000000	41.000000
1156.4750	1.0000000	0.014375881	5.0000000	40.000000
1162.5063	1.0000000	0.011784526	6.0000000	40.000000
1189.2088	1.0000000	0.0085082185	4.0000000	48.000000
1196.5738	1.0000000	0.025861448	5.0000000	42.000000

Information **block number 77152**

Input Parameters:

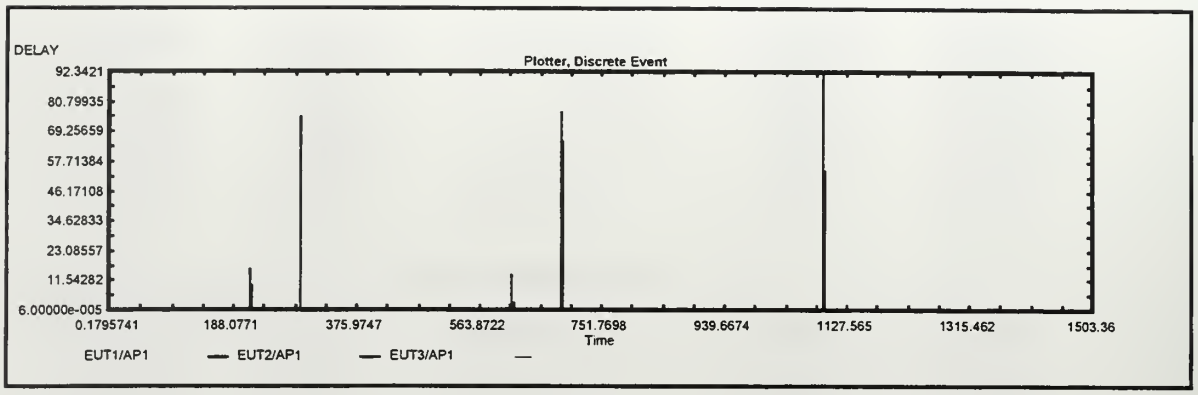
Arrival Time	Priority	time differe	COMMTYPE	OriginAP
1079.9000	1.0000000	0.033739579	7.0000000	22.000000
1091.9913	1.0000000	0.016116216	6.0000000	5.0000000
1092.9938	1.0000000	0.015670321	5.0000000	42.000000
1107.1107	1.0000000	0.00023454533	5.0000000	44.000000
1112.0431	1.0000000	0.00028237514	6.0000000	45.000000
1125.1850	1.0000000	0.015943486	4.0000000	5.0000000
1125.6729	1.0000000	0.00027059711	5.0000000	44.000000
1128.8638	1.0000000	0.0081901577	4.0000000	41.000000
1135.6731	1.0000000	0.00022664199	6.0000000	40.000000
1142.9782	1.0000000	1.0909091e-005	7.0000000	48.000000
1171.0013	1.0000000	0.010955148	4.0000000	41.000000
1171.5025	1.0000000	0.00028951357	5.0000000	46.000000

Information **block number 83021**

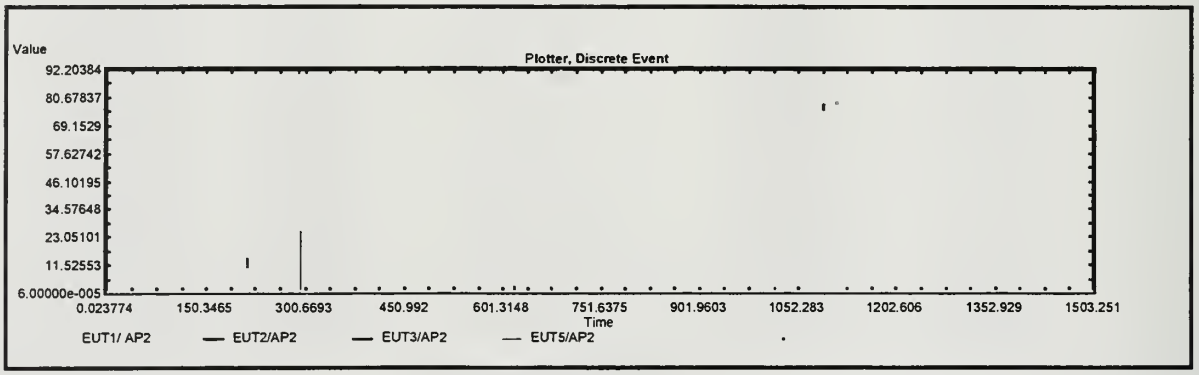
Input Parameters:

Arrival Time	Priority	time differe	COMMTYPE	OriginAP
1070.2675	1.0000000	0.011284819	4.0000000	5.0000000
1089.3800	1.0000000	0.027896722	4.0000000	4.0000000
1091.2469	1.0000000	0.00035886293	4.0000000	17.000000
1100.0983	1.0000000	0.00011816729	4.0000000	17.000000
1111.5620	1.0000000	0.00011633489	4.0000000	17.000000
1111.8050	1.0000000	0.014872884	4.0000000	5.0000000
1113.5675	1.0000000	0.011749808	4.0000000	5.0000000
1140.8863	1.0000000	0.028942684	5.0000000	4.0000000
1141.6978	1.0000000	0.00037187083	5.0000000	17.000000
1148.1547	1.0000000	0.00033555211	5.0000000	17.000000
1148.9671	1.0000000	0.00060992786	6.0000000	17.000000

1149.7300	1.0000000	0.030231738	8.0000000	4.0000000
1152.0175	1.0000000	0.017284119	7.0000000	5.0000000
1153.8113	1.0000000	0.028578272	4.0000000	4.0000000
1156.4863	1.0000000	0.025629881	4.0000000	4.0000000
1162.5238	1.0000000	0.029288526	4.0000000	4.0000000
1189.2004	1.0000000	0.00012367614	4.0000000	17.000000
1196.5613	1.0000000	0.013365448	4.0000000	5.0000000



Run 4 AP 1



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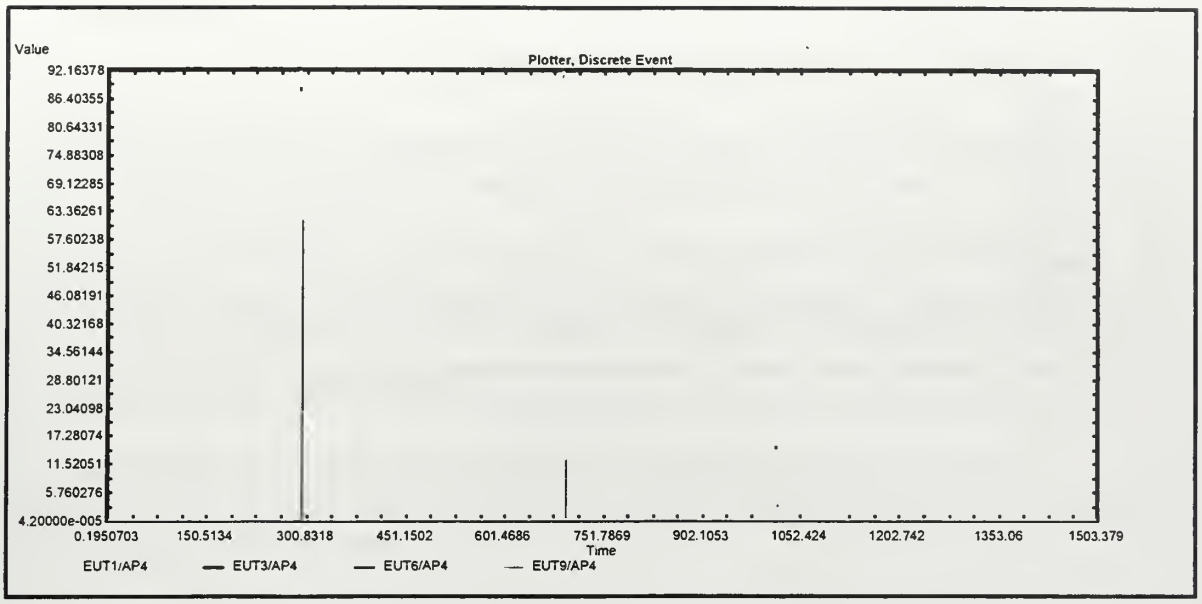

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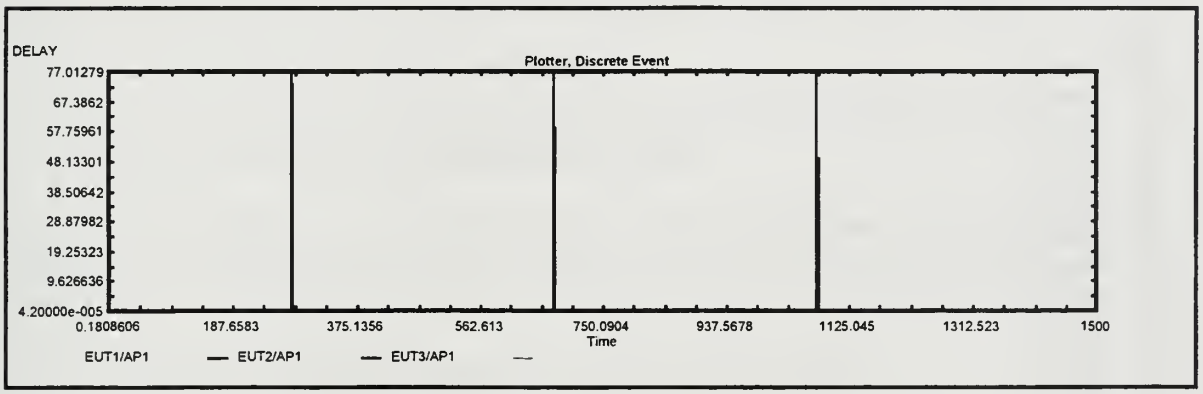

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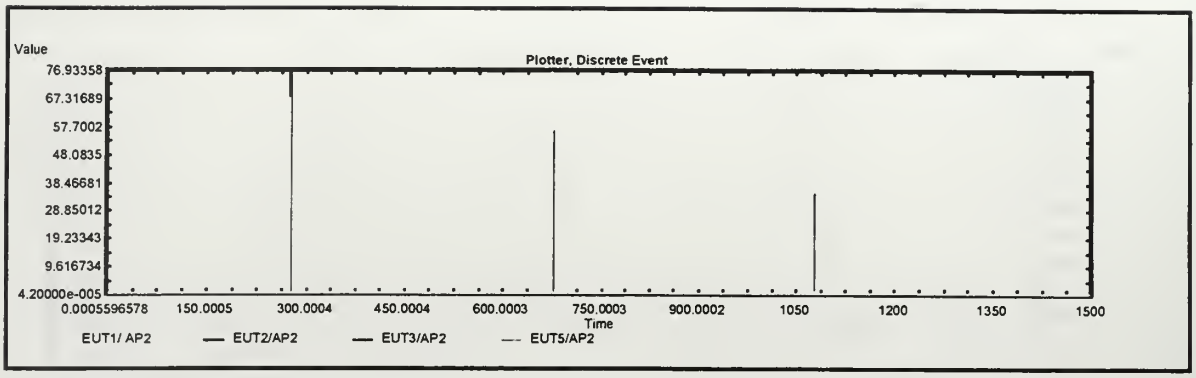

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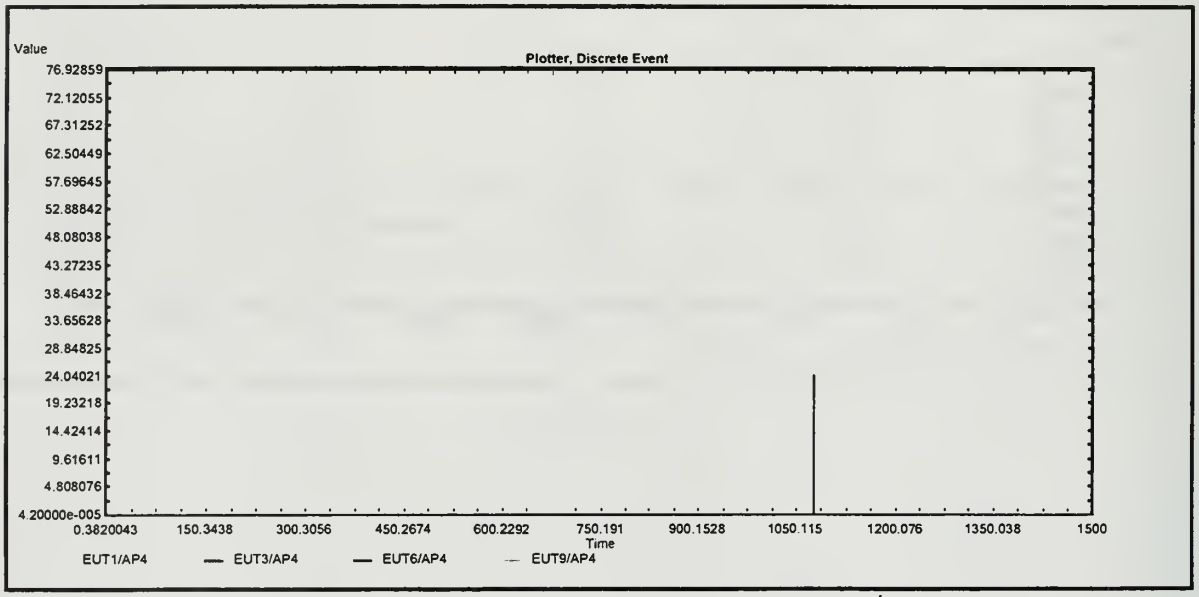

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